

PRACTICAL INSTRUMENTATION

BY

RICHARD HOFMANN.

TRANSLATED BY

ROBIN H. LEGGE.



PART I.

THE STRINGS.



LONDON
AUGENER & C^o.



NEW YORK
G. SCHIRMER.



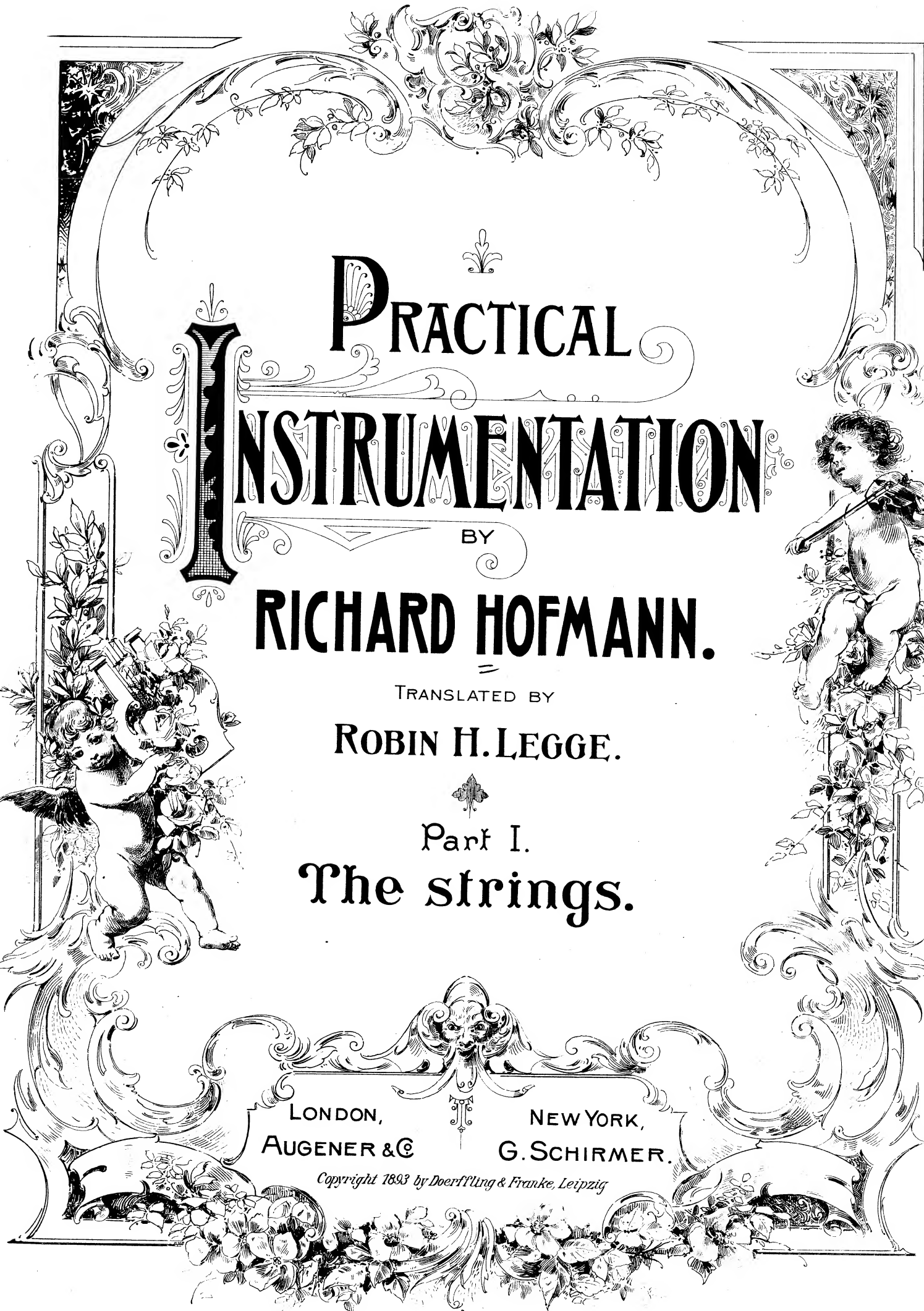
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PREFACE.

By means of this text-book the earnest student, who already has a thorough knowledge of harmony, may obtain an introduction to the orchestral instruments and their use singly or in combination, which by study and practise he can develop until he has every detail at his finger-ends. After the lesson unfortunately all too often much slips the student's memory which the teacher believes he has thoroughly explained, and not the best memory nor the keenest zeal for learning protects the pupil from this. That which is essential in the matter taught is quite differently impressed upon the memory when definite models are there in black and white before the eye, as in this book.

As no stringed, wood, or brass instrument is in tone and character precisely the same from the lowest to the highest note of its compass, the quality of tone of the various registers of each instrument and their possibilities are here duly set forth. Naturally what pertains chiefly to an exact study is avoided—this can only be gained from special books; and as words can give but a very limited idea of the sound of each instrument, the student is earnestly recommended to obtain for himself practical knowledge. In order to accustom the ear to the various registers, it were well to allow them to be played before him by efficient instrumentalists. This is more effectual than much verbal explanation!

For purposes of study, compositions for pianoforte by both past and present composers may be arranged for instruments, solo or in combination; but this must not be taken to imply that the pupil may not himself compose for the various groups of instruments. In the former case he is more tied down to reproduce the original melody, harmony and accompaniment than in the latter, where he may allow himself any liberties. Nor should the arranging of the works of others be undervalued. It is certain from experience that such arranging leads to greater familiarity with the instruments. In this way many have learnt to write both effectively and practically for orchestra. Perseverance, diligence, accurate testing and noticing effects assuredly lead to the goal — i. e. to the desired ease and freedom in handling the instruments.

Since information, as precise as possible compatible with limits of space, will be given in the due course of the book as to the tone-colour of the various instruments alone and in combination, and explained by means of numerous examples from the scores of the greatest masters from Gluck to the present time; it is unnecessary to say more here. These examples, however, should be thoroughly explained during the lesson, both as to the part each instrument plays in the whole scheme and the character of its tone.

The best opinion of their actual effect can be derived of course from hearing occasional performances of the examples. Differences of opinion which may arise when any of the examples are heard, are not to be disregarded.

Stringed-instrument players do not all possess equally good instruments, and so one will produce a better tone than the other. Still more striking, however, is the difference in the wood and brass instruments. On hearing a flute, oboe, clarinet, bassoon, horn, trumpet, cornet or trombone one cannot say 'that is not the right tone-character of the instrument'; but one can note if the tone is hard, raw, rough, bright, sharp, noble, mild or veiled. These irregularities of tone arise usually from faulty embouchement. As one finds among singers a variety of manners of attacking a tone and of its

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colour, so is it also with wood and brass players. Frequently, too, a natural tone-effect is not produced because of faulty intonation, as in the case of horns and trumpets — which would not occur so often were players to study their convenience less (See "Horns" pt. IV: Trumpets, pt. VI.)

Sometimes a pupil is recommended to arrange again for orchestra the pianoforte transcription of a piece originally written for the orchestra. But the profit to be derived from this proceeding, which really is obvious, is not always recognised.

I recommend this study with those given in the book, but in this way. (by which much time is saved), that the pupil take both score and pianoforte transcription in his hand and compare them. He will thus learn how an orchestral piece may be transcribed for the pianoforte or vice versa. In addition to studying the analyses and exercises given here, the pianoforte-playing student is recommended to devote himself to playing from score, for thus a rational study of scores comes of itself.

Without a thorough knowledge of the instruments and of their united effects it is impossible to arrive at any real practical skill in instrumentation. To some no doubt this will seem a circuitous route; yet with honest diligence much can be achieved thus in a short time. Only by working on a solid basis can the most earnest endeavours in art reach the goal.

Often sad enough are the attempts of struggling composers, who have not a precise knowledge of the elementary laws as to the handling and combination of instruments. Even more often we meet with a composer, whose sense of tone is imperfect; this though capable of being trained aright can hardly be made perfect. Instrumentation must be understood by every musician, especially if a conductor, in order that he may tide over difficulties in practice. The author permits himself to hope that his book will be useful in giving a bird's-eye view of instrumentation. May it meet with consideration and esteem!

R. H.

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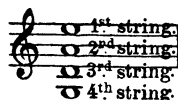


PART I.

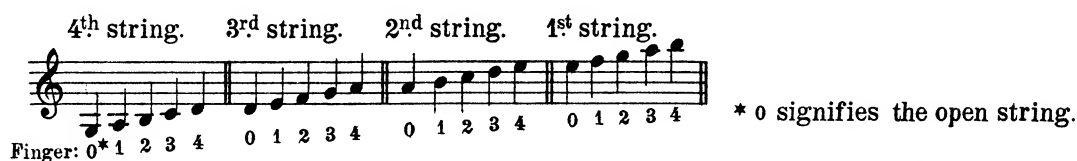
The Violin.

(Italian, Violino, French, Violon).

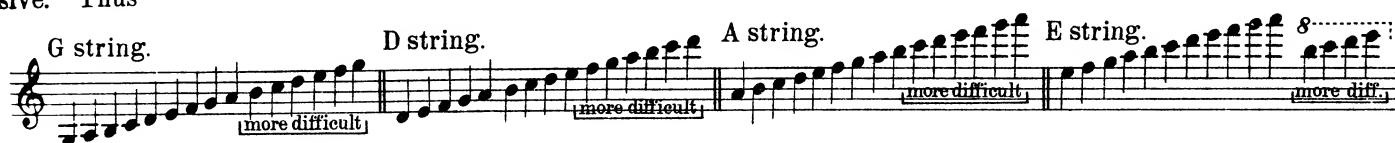
The violin is one of the most serviceable and grateful of all orchestral instruments in virtue of its tone, extensive compass, variety of tone-colour, and diverse uses either alone or in ensemble. The four strings, stretched over the body of the violin, are tuned in fifths, the deepest to the note *G*, the next to *D*, the third to *A* and the fourth to *E*. Thus



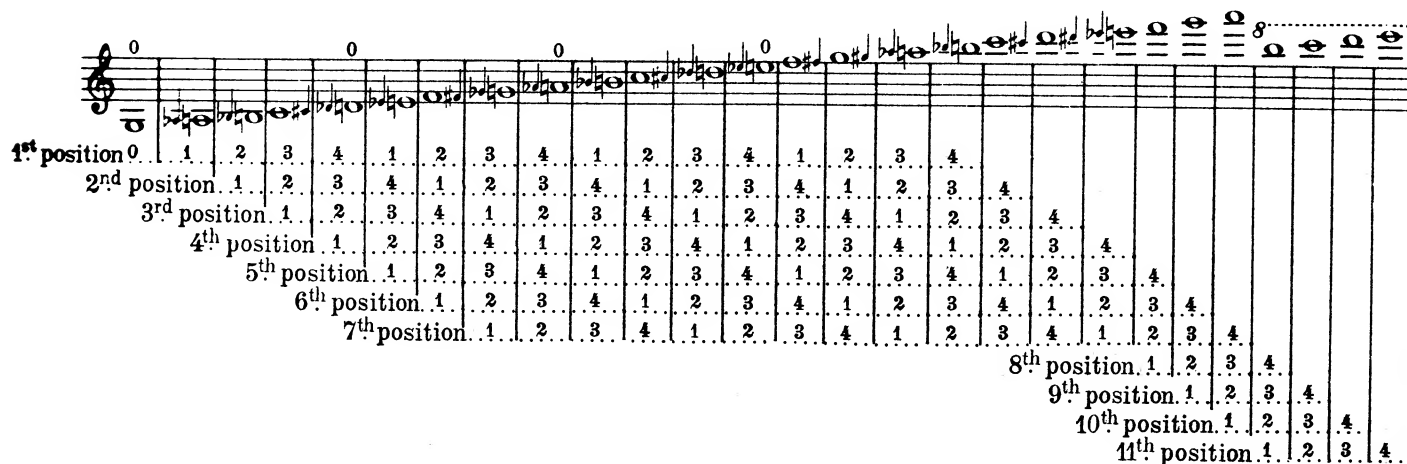
In order to produce other than the open notes, the fingers of the left hand are used. By pressing firmly with the fingers the following and many other diatonic and chromatic successions of notes can be played.



These five diatonic steps, between which lie the chromatic intervals, are of course not sufficient for the smooth rendering of all possible passages; and it should be noted that the compass of each string is very extensive. Thus




In order to play these scales on one string the violinist must use the various positions, of which there are normally seven to each string, though for the highest notes eleven are required. These will be found in the table below. By moving the first finger a certain distance up or down the string these positions are arrived at, the position thus being determined by the note pressed down by this finger. The tones in the 9th—11th positions on the *G*, *D* and *A* strings, (marked "more difficult" in the above example) are not especially striking in effect.



Thus the compass of the violin extends through three octaves and a sixth, with all chromatic intervals.



For orchestral purposes the compass should not exceed . Although in many recent compositions higher notes are written for the violins, yet these should be used with great caution since their execution endangers the intonation. Every violinist in a passably good orchestra should be able without very great difficulty (?) to command the whole of the above compass in any passage he may be called upon to play.

All scales as well as some broken chords of three and even four notes are playable upon the violin, in major or minor, in many ways and rhythms, either disconnected or bound together. Those pupils who are not violinists are recommended to read some recognised violin-school. The chromatic scales offer more difficulties than the diatonic in rapid passages, and are in fact more rarely used, since because of these difficulties their effect is poor.

All notes playable upon the violin can be played with every variety of tone from *ppp* to *fff*, *crescendo* and *diminuendo*, either while sustained or in course of a brilliant passage. Thus



Playable either legato or staccato, and with every sort of bowing.



The Tone-colour of the four strings.

Each string of the violin is distinguished by a particular tone-colour. Thus the tones of the *G*-string, especially in a *forte* passage, are powerful and rich; those of the *D*-string tender and elegiac; of the *A*-string sweet, and of the *E*-string brilliant.

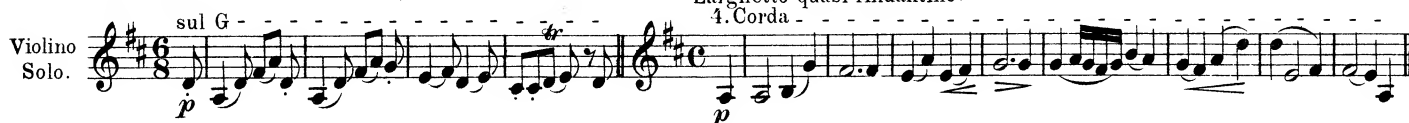
In the second half of the octave above *C* in alt the tone of the *E*-string, though rather thinner, still retains its sharp brilliancy.

But the tone of the *G* and *D* strings loses some of its characteristic colour directly the writing exceeds the octave or ninth, and the performance of wider intervals on these strings, involves, as has been said, some difficulties. On the *A*-string it were well never to write above the tenth, but, on the other hand, far higher notes are easily available. The above-mentioned characteristic tone-colours are, then, only noticeable in any appreciable degree when a melody is played upon one and the same string, as a glance at the following examples will show. When a *cantabile* passage is intended to be played upon one string, the words 4th, 3rd or 2nd string, or *sul G*, *D* or *A*, are written, and dots placed over the notes so long as the melody shall be played upon that one string.

Beethoven. Violin Concerto, 3rd movement.

J. Raff. Cavatina, op. 85, No. 3.

Larghetto quasi Andantino.



M. Bruch. Violin Concerto, op. 26, 2nd movement.

Adagio



L. Spohr. Violin Concerto, No. 7. 2nd movement.

Adagio.



Mendelssohn. Violin Concerto, 1st movement.



Allegro molto.



See also Violin Solo. Part III, Full-score Examples.

In rapid passages, diatonic or chromatic, or in successions of chords where more than one string is called into play, these characteristics disappear.

Of Ornaments.

Ornaments of all kinds can be played on any note except, of course, the lowest *G*  and in the intervals of the octave about *C* in *altissimo*. Shakes, grace notes and mordents even in the octave above *G* in *alt*  though executed by many players, are often very difficult, and fact which is the more noticeable on account of the impure intonation. Therefore it is advisable to omit such ornaments altogether, more especially if they should be played simultaneously by several instrumentalists.

The following examples are all difficult when directly attacked, yet in *mf* or *ff* passages when played by a mass of instruments their effect may be fairly good since the impure intonation would not be so noticeable, and if other instruments are playing the same ornaments in a lower octave the effect would be still better.

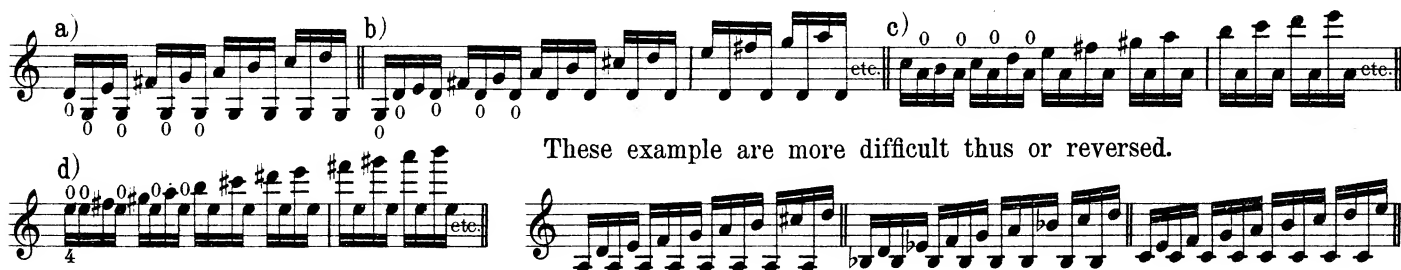


Of wide Intervals.

Wide leaps from deep to high intervals or the reverse which necessitate the use of extreme positions are very difficult to play in a very rapid *tempo* (see examples below), and even in slow *tempo* only at some loss of pure intonation.



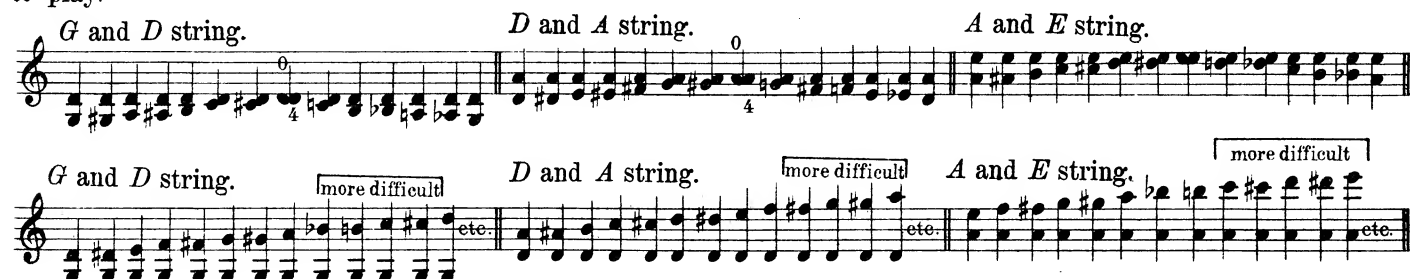
Diatonic passages and chords offer fewer difficulties in rapid *tempo* in both the deeper and the higher positions. Leaps of an octave or more in rapid *tempo* are easily playable when the notes occur on two adjoining strings, and especially when the lower note is produced by an open string: thus —



These example are more difficult thus or reversed.

Double stopping.

Double notes can be produced from the violin by a player, and are much used in solos and in the accompaniment of melodic phrases. The following table shows those that are easy and those that are difficult to play.



G and *D* string. more diff. *D* and *A* string. more diff. *A* and *E* string. more difficult etc.

G and *D* string. etc. *D* and *A* string. etc.

A and *E* string. etc. *G* and *D* string. etc.

D and *A* string. etc. *A* and *E* string. etc.

G and *D* string. etc. *D* and *A* string. etc.

A and *E* string. etc. *G* and *D* string. more difficult etc.

D and *A* string. more difficult *A* and *E* string. more difficult etc.

G and *D* string. easy more difficult etc. *D* and *A* string. easy more difficult etc. *A* and *E* string. easy more difficult etc.

An orchestral violinist can play any of the above chords in moderate *tempo* even when they follow rapidly upon each other; but they can be grouped in so many various ways that it is quite impossible to give more than a small number of examples here. The following show at a glance the variety of use to which chords can be put. All are playable either legato or staccato.

Similar chords can be played on the *D* and *A*, a *A* and *E* strings.

And these with the use of several strings.

Though many rapidly following chords are impracticable for any orchestral violinist, yet, when writing for stringed-orchestra, the composer is not bound so strictly by the necessity of being practical, since each violin-part is at least doubled. Thus, then, when chords are written, the violinists divide, and the difficulties are overcome. In such cases the word *divisi* (written shortly *div.*) should be placed over the passage thus:





Though double shakes in thirds and octaves can be played by one violinist, yet these should only be used in solos.


When they occur in orchestral music the players divide, as the following example shows.



Of triple stopping.

A chord of three notes can be played in one stroke and in all degrees of tone. In *f* or *ff* passages they are of particularly good effect. It will be noticed that when a chord of three notes is played (in *adagio* for instance) two only of the notes can be sustained, since the rounded top of the bridge over which the strings are stretched prevents the hair of the bow from touching more than two adjoining strings. Thus chords written in this

manner  sound as if written thus:  The omission of an interval from chords following each other rapidly, that is, which are not sustained, is hardly noticeable.

For example:  The annexed table shows the easy and difficult three-note chords.





These three-note chords *in arpeggio* are playable in various ways, thus:

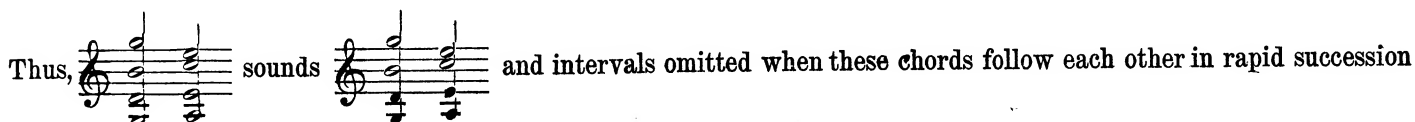


The following successions of broken chords are not only practicable but of good effect, and can be played with every variety of bowing.



Of quadruple stopping.

What has been said of triple stopping applies with equal force to quadruple stopping, and chords of four notes suffer in a precisely similar manner in that but two of the notes can be sustained.



*) See p. 11 and 12.

are not noticed.



The following table shows the four-note chords which are playable.

NB

NB. + These chords are more difficult to play.

All of these chords can be rendered in arpeggio and in broken chords as a glance at the table below will show. But successions of such chords should be used sparingly in orchestral music, and reserved rather for a solo.

The following chords, too, can be played in the same way.

Of the Tremolo vibrato.

The tremolo vibrato, which is produced by rapid changes of bowing on one or more notes, can be used in slow, sustained or quick *tempi*, and with all shades of tone, the actual notes played being semi-quavers, demi-semi-quavers or even smaller divisions. But the bowing must be so rapid that only a vibration or a quiver is heard. The effect of the tremolo is lost if semi-quavers are played in slow *tempo*; and so in *adagio* or *andante* movements demi-semi-quavers or more are written. It is advisable, moreover, to write the word tremolo over the passage to be played thus.

When a long succession of notes is to be played progressively in rapid tempo, thus

Allegro. *divisi*

Allegro. *divisi*

Allegro. *divisi*

Allegro. *div.*

Viol. I. *div.*

Viol. II.

this notation must not be regarded as indicating a tremolo. By the rapid repetition of the notes greater power and fullness is here gained, and the passage itself gains in "strength, haste and restlessness".

See Ex. in Score, pt. I, p. 53, pt. III, pp. 41, 45, pt. V, pp. 18, 33, 41.

But in slow tempo in music of a more peaceful character

Andante sostenuto *trem.*

Andante con moto. *trem.*

the effect of the real tremolo either in one or more parts is soothing and elevating.

See Examples in score-pages Pt. I, p. 44, 45, 56, 83. Pt. III, p. 23. Pt. V, p. 52. Pt. VI, p. 73. Pt. VII, p. 9, 13, 82.

The tremolo is sometimes used to give the melody or harmony more fullness. It may occur in octaves (*divisi*) and in chords of two, three or four notes, and is easily playable when there are a number of players. The following example shows the different methods of notation.

1. Andante. *trem.* *div.* Violino I.

2. Largo. *trem.* Viol. I *div.* or Viol. I & II.

3. Andante. *trem.* Violino I.

4. Moderato. *trem.* Violino I.

5. Moderato. Viol. I. Viol. II. Viola.

Between the parts played *tremolo* others may be sustained — thus:

Moderato. Solo. *div.* Viol. I.

Viol. II.

3 Violins or 2 Viol. and Viola. Andante. *trem.* Violoncello.

Here the tremolo is somewhat hidden. A solo part may occur, above, under or in the midst of others played tremolo.

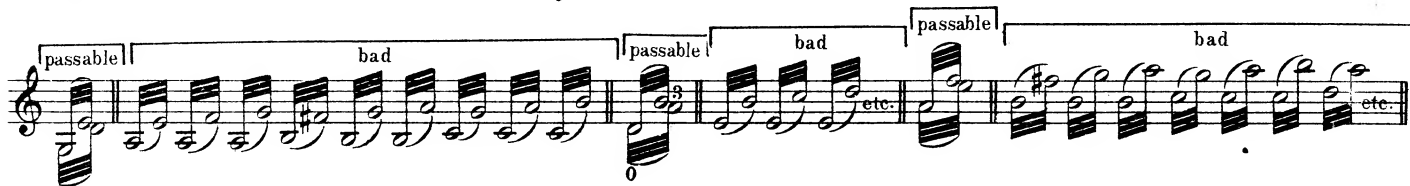
Moderato. *div.* Violino I.

Violino II.

Viola or Violoncello.

Of the Tremolo legato.

The tremolo legato or "undulating" tremolo is produced by the legato repetition, rapid as a shake, of a 2nd, 3rd, 4th, 5th or other interval. This is entirely different from the preceding method, and in character is tranquillizing, rustling, flowing. It can be used for the violin in either slow or rapid movements in the orchestra, but a good effect can only be produced by several players, whose number depends upon the notation — if many notes of a chord are to be played, many players will be required. It should be noted that a composer must only write such intervals as could be played *legato* by one player on one string; and that the player should never be required to call in a second string to his aid, this causing the entire effect to be lost. Nevertheless examples of it are sufficiently common in the present day.



The following examples show the arrangement of the *tremolo legato* for small and large numbers of players and the use of this *tremolo* with the *tremolo vibrato*.

1. Andante. *trem.* Viol. div. or Viol. I & II. 2. *trem.* Violino II. 3a) Andantino. div. b) c) 4a) div. b) c)

5a) b) c) 6a) b) c) 7a) b) c) 8a) b) c)

1st Violins. Violino II. 1st Violins. 2nd Violins.

The following notation is frequently found, when the real value of the notes is to be accurately given.

1) Moderato. 2a) b) 3a) b) 4. 5. 6. 7. 8. 9. 10.

In slow *tempo* these examples cannot be described as *tremolo*.

See Ex. in score Pt. I p. 46, 82. Pt. III p. 42. Pt. V p. 49. Pt. VII p. 78.

Sul Ponticello.

Sul ponticello is a kind of *tremolo* played close to the bridge. The effect is entirely different from either of the preceding tremolos, since the character of the tone produced is rustling or whistling. The effect can be utilized in one or more parts simultaneously like, in fact, the *tremolo vibrato*, and when well played by several players it is very characteristic. The tones of the *G* and *D* strings are best suited to the effect provided they are not used in too high positions; and the words *sul ponticello* are written over the passage to be so played.

Pizzicato.

Pizzicato (shortened, *pizz.*) the antithesis to *arco* ('with the bow'), is an effect produced by plucking the strings with the finger. It can be used in either slow or quick *tempi*, and in all possible grades of tone; and the player can pass at once without any rest from *arco* to *pizzicato*, and the reverse. It can be played by one or more instruments in unison or in harmony, for the melody, for decorative purposes, or in accompaniment.

Below are a few examples.

The musical examples are arranged in three rows. The top row shows a single staff with three measures: 'Moderato. arco' (quarter notes), 'pizz.' (quarter notes), and 'Andantino. arco' (eighths), followed by 'Allegretto. arco' (eighths) and 'pizz.' (quarter notes). The middle row shows two staves: 'Viol. I div. or Violino I & II.' (pizz. eighth notes) and 'Viol. I div. Viol. I & II. or Violino II. Viola.' (pizz. eighth notes). The bottom row shows three staves: 'Viol. I.' (Moderato. pizz. eighth notes), 'Viol. II.' (Moderato. pizz. eighth notes), and 'Viola.' (Moderato. pizz. eighth notes), followed by 'Allegretto.' (pizz. eighth notes). To the right of the bottom row, text explains that the examples can be played *pizzicato* at *p*, *mp*, *f*, or *ff*, and when properly used are of good effect. Below this text is a short *appoggiatur* example in 3/4 time, consisting of a quarter note followed by a dotted quarter note.

For examples see Examples in score, Pt. I p. 47, 56, 59, 95 and pt. III p. 9, 22, 23, 34, 35, 45. Pt. V p. 10, 30, 32, 34, 35, 38, 39, 45—47, 51. Pt. VII Examples in score.

In solos (or, for example, in De Beriot's first concerto), *pizzicato* is played by the left hand also.

Con Sordino. (With the mute.)

The mute (Italian, *Sordino*), which is placed upon the bridge, weakens the natural tone-colour and produces a soft, veiled, rather nasal, melancholy or mysterious effect. When a composer requires a player to use the mute, he must write the words *con sordino* over the passage, at the close of which the words *senza sordino* must be placed; and a short rest should always be given to the player before placing the mute in or removing it from position. The mute can be used in *tremolo* and *pizzicato* passages.

See Examples in score. Pt. I p. 44, 47. Pt. III p. 42. Pt. V p. 48.

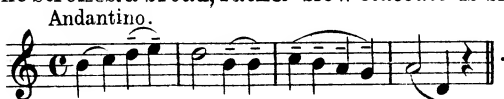
Of the bowing of Stringed-instruments.

For the purposes of phrasing, the violinist makes use of various styles of bowing, which should be clearly defined by a composer that the player fall into no error. Many passages and long sustained notes or chords, which should be played *legato*, are very difficult sometimes to render in one bow, but a good player will change the bowing without in the least disturbing the evenness of the *legato*. The point and middle of the bow are better adapted for the performance of either slow or more rapid *piano* passages than for those marked *f* or *ff*, the middle being particularly useful in lively and playful movements, and in *tremolo*. The lower part of the bow near to the nut is employed in *pesante*, *marcato* and *forte* passages. It must be understood, however, that in exceptional cases these may be reversed.

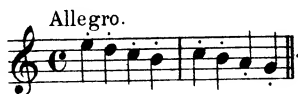
The down-bow is marked thus ▢, and the up-bow thus ▽ over the notes. The following examples show the various bowings for particular phrasing. When a long bow is required, short strokes should be placed over the notes.



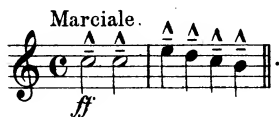
In this way the notes are made more distinct from each other by the change of bowing. In the next example in which a slur is placed over the strokes, a broad, rather slow *staccato* is shown, the notes of the successive intervals being not so widely disconnected.



Short *staccato* notes have a dot above them, thus.



Short, firm bowing (*marcato*) is marked thus > or ^ over the notes; but when a particularly broad, powerful tone is required the sign Δ is placed over the notes, thus:



Of the springing bow.

Light, airy passages of short notes are sometimes played with a springing bow, the notes having a dot over them and the word *spicato* or *saltato* should be written — Thus.



Both methods of bowing can be combined with slurs, and two or more notes played with a springing bow.


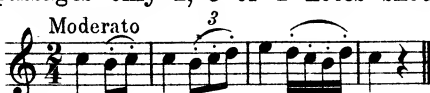


The difference between *spicato* and *saltato* consists chiefly in the fact that the former can only be used in a rapid tempo since the hair of the bow hardly quits the strings, where as *saltato* passages are sometimes found in slower tempi.

The staccato.

When one or more notes or successions of notes are to be played in one bow this is called *staccato*, and it can be played in three different ways: 1) with a light short jerk denoted by dots and a slur over the notes: 2) with a firm and more marked jerk, denoted with a pointed dash and a slur over the notes; thus Δ 3) with a heavy, slow stroke, thus --- .

The first gives the impression of lightness, the second is more decided and firmer, and the third more tranquil in character. Each can be played with an up or a down bow, but *staccato* with a down bow in rapid tempo is somewhat difficult and sounds rather heavy and dull.

In *f* and *ff* passages only 2, 3 or 4 notes should be repeated, thus:  or progressing  In longer successions of notes the purpose of the *staccato* is lost since it is impossible to produce thereby a very great tone.

Light staccato. 

Firm staccato. 

Broad, heavy staccato. 

In orchestral works a long *staccato* passage is rarely found.

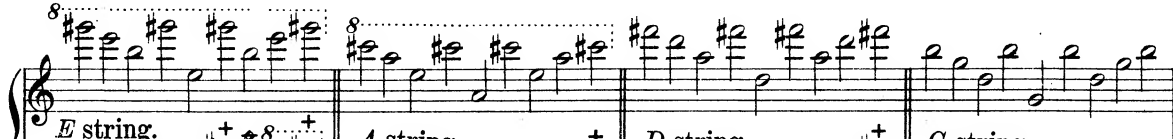

Col Legno (with the wood).

To produce this effect the strings are struck by the wooden stick of the bow in the place where the hair normally plays. It is a short, as it were, brittle sound, and is often used by all the strings together, generally in accompaniments. Wagner has made use of the effect in "The Meistersingers".

Of Harmonics and their Notation.

Harmonics or flageolet tones are used both in solos and in orchestral pieces, and are produced by laying the fingers of the left hand lightly on the strings in certain places properly defined by nature. By means of harmonics the compass of the violin is considerably increased upwards. The character of their tone is peculiar, and to a certain extent not unlike that of the flageolet, a small wood-instrument. Harmonics are divided into two classes — natural and artificial. The first are chiefly used in the orchestra, and are the more easily produced.

The following table shows the easy natural harmonics, their notation and actual sound.

Sound.				
Method of writing.				

NB. Those marked + are rather more difficult.

Artificial harmonics are produced in five ways.

I) When the first finger of the left hand is set down firmly on the string and the fourth (little) finger

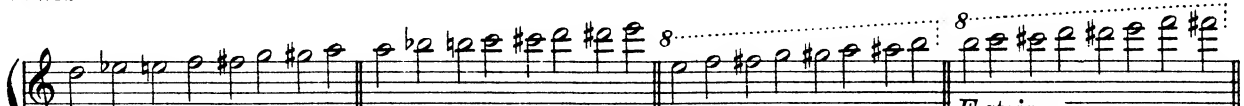
*) See Part II.

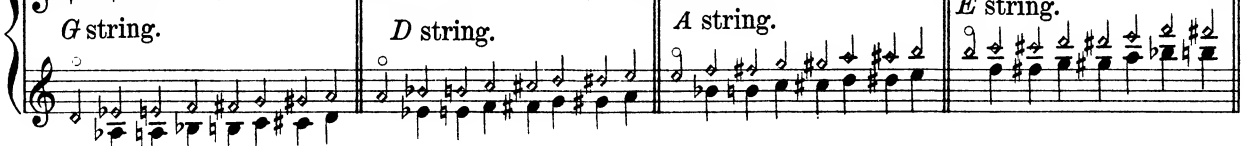
touches the string lightly a perfect fourth higher, the note produced is two octaves higher than that pressed down. See examples:

Sound. 


Method of writing. 

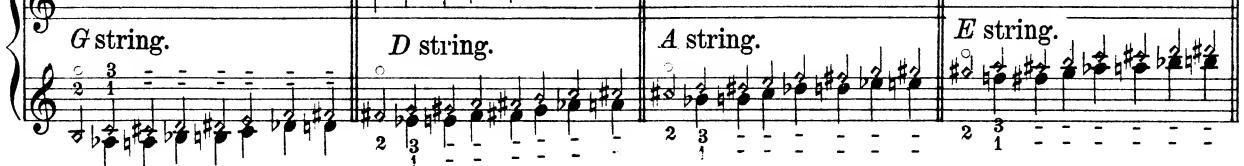
II) When the little finger touches the string a perfect fifth higher than the note pressed down, the note produced is an octave higher than that whereon the little finger rests, that is, an octave and a fifth above the note pressed down.

Sound. 


Method of writing. 

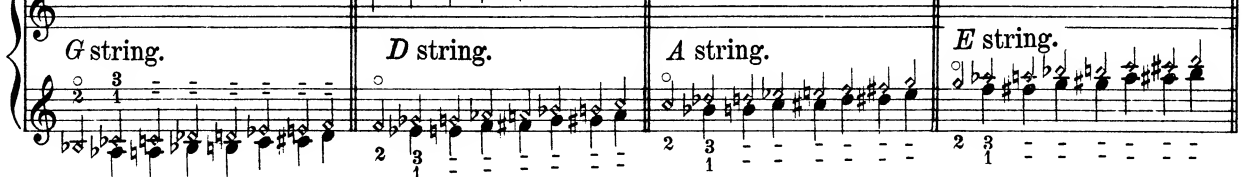
III) When the little finger touches the string a major third higher than the first finger, the note produced is two octaves and a major third above the note pressed down.

Sound. 

Method of writing. 

IV) When a minor third, the note produced is two octaves and a fifth above the note pressed down.

Sound. 

Method of writing. 

V) The last way, which is very difficult, is produced by pressing down the first and laying the fourth finger lightly on the string an octave above. The note produced is then an octave higher than that pressed down. It is, however, not given to every violinist to stretch the octave, and so this method is rarely used.

Sound. 

Method of writing. 

The higher the position the more difficult to produce become the artificial tones 2, 3, 4 and 5. They are therefore rarely used in the orchestra.

In full scores and orchestral parts harmonics are written in the following ways:

1. *G, D, A, E* strings.

2. *G* string. *D* string. etc.

3.

Harmonics.

1 Viol.

2 Violin

3 Violin.

Ex. 1. can give rise to no doubt on the part either of player or conductor as to the note, since that written is the same as that sounded. Ex. 2, shows only the method of production without the actual note produced: Ex. 3, shows both the method of production and the note produced; Ex. 4 shows the note to be produced *by harmonics*. Ex. 2 would only embarrass a conductor who had no experience of violin-playing, while Ex. 4 is easier for the conductor than for the player, since the method of writing the notes might surprise the latter if he happened upon it suddenly during performance. Therefore it is in any case the best when writing either natural or artificial harmonics, to use the method as in Ex. 3, since thus both the written note and that to be produced are seen at a glance. The following examples show the most profitable manner of writing harmonics.

Octave sounds.

Unison in 3 octaves.

Chords of 3 notes composed of natural harmonics.

Chords of 3 notes composed of artificial and natural harmonics.

Chords of 4 notes composed of artificial and natural harmonics.

Violins doubled.

Violins tripled.

Violino I div.

Violino II div.

Andante.

Successions of harmonics, such as the following, offer no difficulties to the player in slow *tempo*, though they are not so easily rendered quickly.

Virtuosi can of course perform much more difficult harmonics, as may be found in many violin solos.

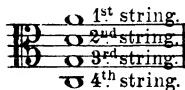
The following 3 and 4 part harmonics are difficult to perform even slowly and therefore rarely occur in orchestral works.

See Score Examples. Part I p. 45, 77. Part III p. 43.

The Viola

(German, die Bratsche)

differs from the violin in its larger form, and the deeper pitch of its strings as well as in the character of its tone. Like the violin, it has four gut strings (the two lower of which are covered by wire) tuned in fifths, *C, G, D* and *A* — a fifth below the violin. Music for the viola is written in the alto clef; and the pitch of the four strings is —



In order to facilitate reading and writing for the viola the higher notes are written in the violin clef, but there is no definite rule as to when the clef should be changed. It is well to use the violin clef when many ledger lines can be avoided thereby.

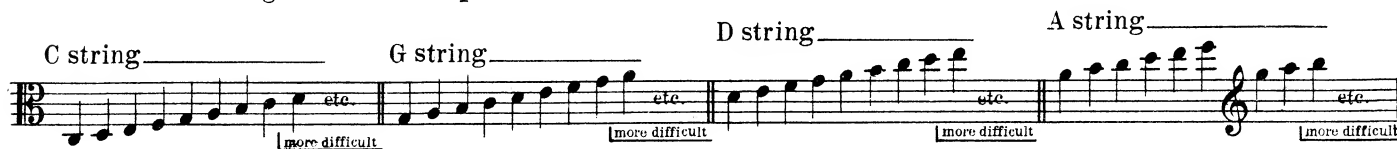
The compass of the viola is from, , but in quartet and orchestral playing this should not exceed the *C* in alt.

The viola is held and played almost like the violin, the only difference being in the wider intervals between consecutive notes, because of the greater size of the viola. This fact should be borne in mind when writing florid passages for viola.

The following example shows the elementary fingering of the viola.



The following notes can be produced from the viola



by means of the various positions. See 'Violin', p. 1.

Each string, too, has its own specific, characteristic tone. That of the 4th (*C*) string is, *f*, full, gloomy, even hard, and *p*, rather dull: of the 3rd (*G*) the tone is more mellow and even, not unlike that of the alto voice: of the 2nd (*D*) much the same, but rather more brilliant; and of the 1st, *f*, harsh, and *p* somewhat nasal though mellow. In the higher positions it is incisive though nasal. The following examples show the use of the tone of the four string:

Weber. Freischütz, Romance and Aria: "Einst träumte meiner sel'gen Base".

Recit. *a piacere*



R. Volkmann. Serenade No. 2 in F. III. movement.



R. Wagner. Overture "Tannhäuser".



All that was said concerning the violin (scales, diatonic and chromatic, broken chords, bowing etc.) is equally applicable to the viola.

Double stopping.

A player can perform the following chords without difficulty upon the viola, as upon the violin (q. v.).

C and G strings. *G and D strings.* *D and A strings.*

C and G strings. *more difficult* *G and D string.* *more difficult* *D and A strings.* *more difficult*

C and G string. *more difficult* *G and D string.* *more difficult* *D and A string.* *more difficult*

C and G string. *G and D strings.*

D and A string. *more difficult* *C and G string.*

G and D strings. *D and A strings.*

C and G strings. *G and D string.*

D and A string. *C and G strings.* *more difficult*

G and D strings. *D and A strings.*

C and G string. *G and D string.* *D and A string.*

easy *more difficult* *easy* *more difficult* *easy* *more difficult*

NB. The chords marked 'more difficult' and 'etc.' are only possible with the aid of the different position, while the others offer fewer difficulties in performance.

The remarks in the chapter on the violin as to rapidly following chords, double shakes in thirds etc. are equally applicable here, as are those having reference to

Triple stopping.

The following examples of this can be played easily without the aid of the positions.

NB. Those marked + are more difficult.


The following examples of

Quadruple stopping,

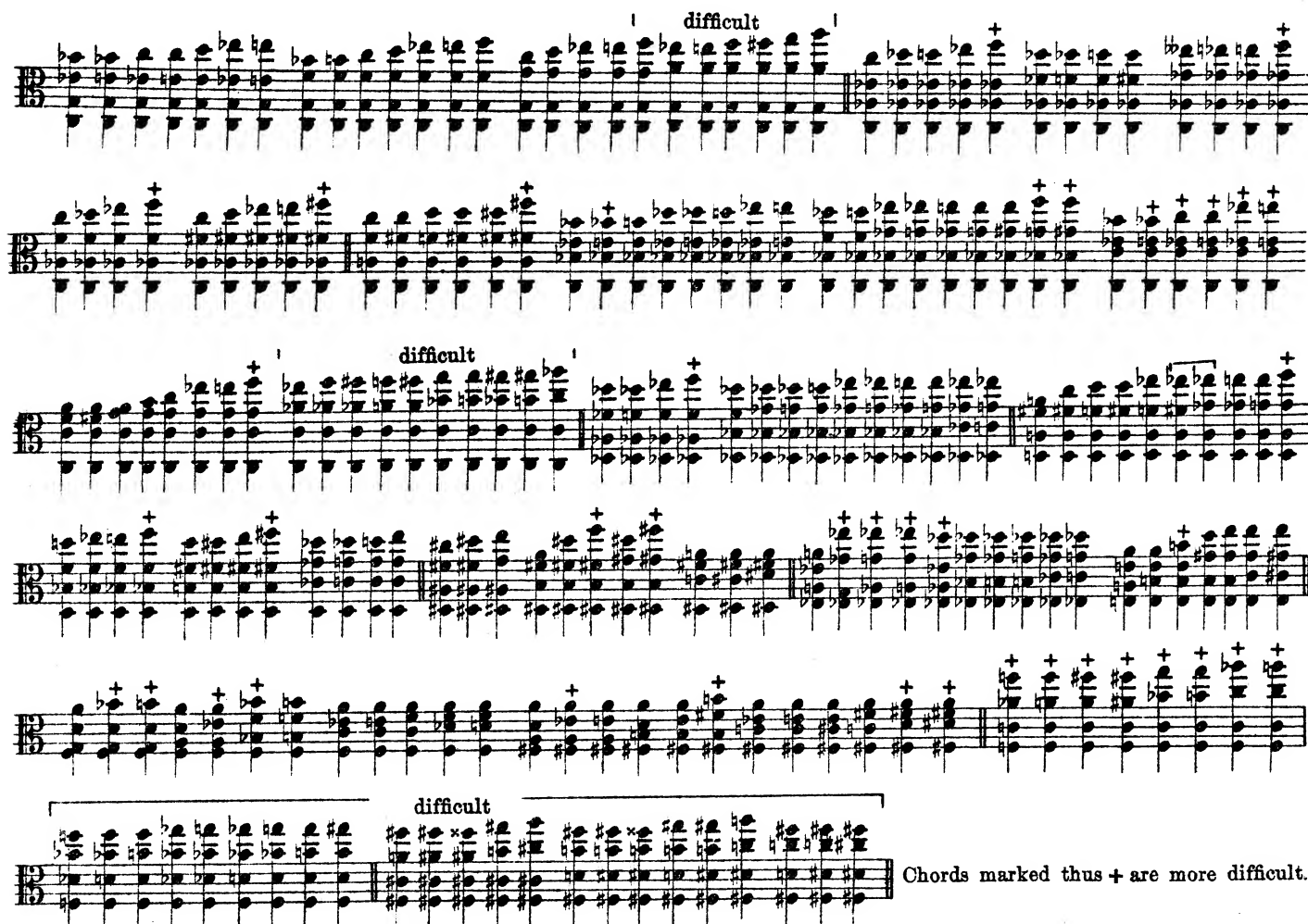
can be played by one player in one bow; but the same defect when the chord is sustained is noticed here as with the violin — that the two lower notes must be quitted by the bow, and therefore the chords

sound thus when played in slow *tempo*. — In chords played rather more rapidly

March.

— as  this defect is not so noticeable.

The following is a table of quadruple stopping playable upon the viola in a great variety of ways, as upon the violin.



difficult

difficult


difficult

Chords marked thus + are more difficult.

All that was said in the chapter on the violin as to *tremolo*, *pizzicato*, *con sordini* etc., can be equally well applied here. But the two tremolos shown there are rarely used for violas alone since they are not often divided in the orchestra. They can be used, however, when the violas play in conjunction with the violins. This remark applies also to the *pizzicato*.

Harmonics, artificial and natural, can be produced from the viola as from the violin, and though they are very rarely used in orchestral music, they cannot be ignored here. The following is a table of these as written and as they sound.

1. Natural harmonics.

Sound.				
Method of writing.	A string.	D string.	G string.	C string

2. Artificial harmonics.

19

The image displays four musical staves, each representing a different string on a violin or viola. Each staff is labeled: 'A string.', 'D string.', 'G string.', and 'C string.' respectively. Above each staff, a dotted line with the number '8' indicates the octave of the harmonic. The staves show the fingerings and bowings for these harmonics, with notes marked with natural signs and sharp signs to indicate the specific pitches.

those under 1 and 2 being the easiest and most effective.

Viola d'Amore.

This instrument, which differs from the viola in being larger, in the tuning, having a larger number of strings, and in the character of its tone, may now be regarded as obsolete. The reason for mentioning it here is that Meyerbeer uses it very effectively in *Les Huguenots*. It has seven strings, the 5th, 6th and 7th of which are wire-covered, and is tuned thus:

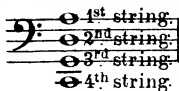


In writing for it the alto and violin clefs are used as in the case of the viola. Under the finger-board and bridge are seven additional steel "sympathetic" strings, made to vibrate by playing upon those above them, to which they are tuned in unison. The tone is like that of the Viola, but is rather more mysterious, and *spirituelle* because of the sympathetic strings.

As the strings are tuned in major and minor thirds as well as fourths, the method of playing this instrument differs widely from that of the Violin or Viola, and there are but few persons to be found capable of playing upon it. Nevertheless Raoul's romance is still occasionally heard with the accompaniment of the Viola d'amore.

The Violoncello

like the violin and viola, has four gut strings, the two lowest of which are wire-covered, which are tuned an octave lower than those of the Viola.



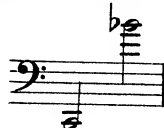
As a rule music for the Violoncello is written in the bass

clef, but for high notes both the tenor and Violin clefs are used. In the orchestra the Violoncello takes its place between the double-bass and the Viola, and usually plays the tenor, baritone or bass part.

Its compass extends 3 to 4 octaves from



but for orchestral purposes



should not be exceeded.

The Violoncello is superior to the Violin and Viola as regards tone-power, but it does not equal them in efficiency, the difference arising not only from its greater size and more difficult manipulation, but also from the character of its tone.

By placing the fingers of the left hand (as in the Violin and Viola) upon the four open strings the following notes can be produced:



These scales, on the four strings, however, are insufficient for either orchestral or solo playing, and in consequence the player must use the various positions, of which there are seven, with half-positions between them. In order to play in the higher positions the thumb is called into requisition (which is marked thus in the music by being), placed sideways upon one or two strings. By these means greater security is obtained and the remaining four fingers are free to produce other notes.

The characteristic tones of the two deeper strings (*C* and *G*) are powerful, pleasant and full, resembling in some degree those of a bass or baritone voice. Of the two higher strings (*D* and *A*) they are, *p*, tender and sympathetic, and *f*, rather penetrating and noble like those of the tenor voice. From



on the *A*-string the tone resembles that of the alto voice, but above that it is somewhat nasal, yet full.

Here are some examples of the use of the various tones of the strings:

Rossini. Overture to Tell.

Andante. *A* string. *A* string.

Violoncello Solo. *p*

Schubert. Symphony in B mi:

Moderato. *A* string. *D* string.

Violoncello Solo.

R. Wagner. Lohengrin, Act II. Night Scene between Telramund and Ortrud.

Andante moderato. *C* string.

Violoncello Solo. *p*

See score examples. Part I p. 48—50, 74, 76, 77, 78. Part III p. 13, 14, 34, 38, 50. Part V p. 13, 22, 24, 34, 38, 40.

In asking a violoncellist to play scales and chords *legato* or *staccato* in great variety, some regard should be had for the difficulties of his instrument, which are greater physically than those of the violin or viola. Every note, however, can be played in every shade of tone from *ppp* to *fff*, quickly or slowly.

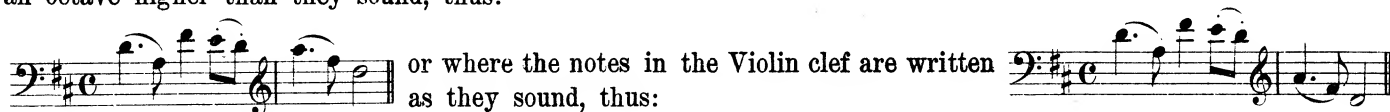
Playable legato or staccato and with mixed bowing.



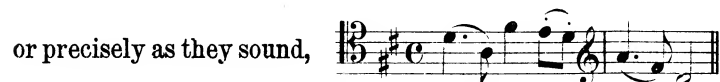
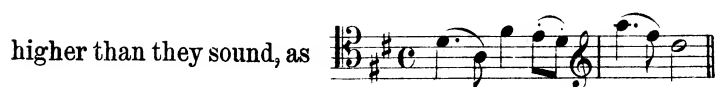
What was said in regard to chromatic scales in rapid *tempo* in the chapter on the Violin, is applicable here. Such scales are much less clear if played upon the *c* or *g* strings, though much depends upon the *tempo*.

It has been said that occasionally the Violin clef is used in writing for the Violoncello. This occurs in various ways; thus:

1) Where the Violin clef immediately follows the bass clef and the notes (in the Violin clef) are written an octave higher than they sound, thus:

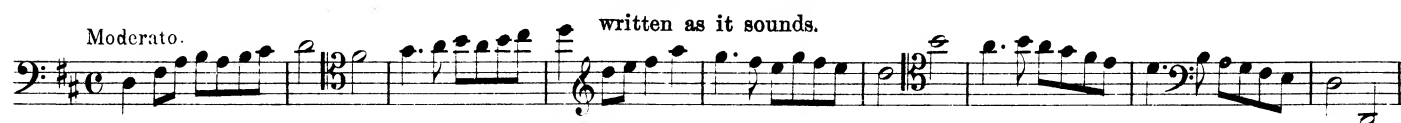


2) Where the Violin clef immediately follows the tenor clef and the notes are written either an octave



Although experienced violoncellists will recognise at once which system is employed, it is more correct to write the higher notes in the tenor clef, and to reserve the Violin clef for *cantabile* passages or those which would be difficult to read (because of ledger lines) in the tenor clef. The violin clef is rarely used in orchestral parts; when it occurs, that part is usually solo.

The following example shows the bridge between the various clefs.



Appoggiaturi, mordents and shakes are possible on all notes on the violoncello, and indeed in the higher positions they are more effective because of purer intonation than on the violin, for the fingers have more space on the Violoncello to play the half tones in tune. On the *C* and *G* strings these ornaments are of little effect in rapid *tempi*.

Great leaps from one interval to another are in many cases very difficult, especially in a quick movement, though they are easy when one or other note is played upon an open string.



See also p. 3 (violin).

Bowing.

The remarks as to Bowing of the Violin are applicable here.

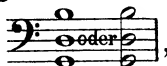
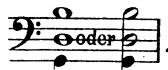
Double stopping.

Orchestral players are rarely asked to perform double stopping, for it is not easy. It is well to note the examples which offer no difficulty to an experienced player. Technically their performance is not so easy as on the violin or viola, and the number in use is comparatively small. Below will be found a few, none of which is difficult.



The above progressions of thirds, fifths and sixths are playable with all chromatic intervals. Major, minor and diminished sevenths, and octaves are also playable, but they are difficult in the deeper register because of the wide span. For this reason the above examples are only easy when played upon the *D* or *A* string.

Triple stopping.

Chords of three notes can be played upon the violoncello , but here again, as in the case of the violin, only two notes can be sustained  because the hair can only grip two notes simultaneously. (See Chapter on the Violin).

The following table shows the chords of three notes which are playable





either in the ordinary way or in arpeggios or broken chords.



So also are the following harmonious progressions:



Quadruple Stopping

is also possible upon the violoncello, though the same defects when four notes are intended to be sustained are observable as before. Thus  sounds,  though the effect is better when the chords are

to be played shorter. Below is a table of chords of four notes playable upon the violoncello, when they are not to be sustained.



These can be played with all kinds of bowing, in arpeggio, etc.,



a very popular decorative material with composers and violoncellists.

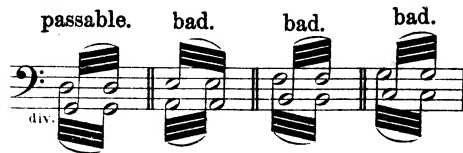


The Tremolo vibrato

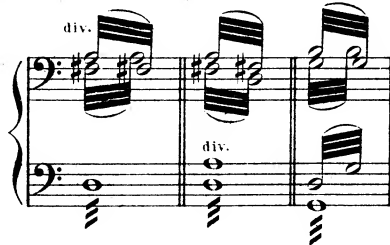
is written as for the violin (*q. v.*), the violoncellos being divided into 2, 3 or 4 or more parts, or playing in conjunction with the violins and violas, or violas and violoncellos alone.

The Tremolo legato

can only be used effectively when several violoncellos play together or in conjunction with the violins or violas; and on the *C* and *G* strings this tremolo is of less effect than on the *D* and *A* strings because of the slow speaking of the strings and the technical difficulty. As shown under 'Violin' this tremolo must be carefully used as the union of two tones in rapid tempo can only occur on one string, and moreover fourths and fifths are difficult to span in the deeper register of the violoncello. It is as well to avoid successions of fifths, as



Tremolo legato and vibrato can be combined with good effect, thus:



In order to give more expression to a note the player, having set his finger upon that note, moves his hand backwards and forwards with, as it were, a tremulous motion — an action frequently observed with rather comical effect! This is sometimes marked thus over a part

*) Easy because the lower note is an open string.

Pizzicato

is effected by plucking the string with the 1st or 2nd finger and can be used in any number of parts, but seldom in any other than rather slower *tempo* than in the case of the violin, because it is more difficult to pluck the thicker strings. Pizzicato is used in the orchestra for decorative purposes, or for accompaniment, to mark the bass (generally then with the double-bass), sometimes alone and at others with the Violins and Violas. The open strings make the best effect.

The Mute (Sordino).

is used upon the violoncello in precisely the same manner as upon the violin (*q. v.*), though not to the same extent.

Harmonics

too, are produced in the same way as from the violin and are similar in character, but their sound is of course much deeper. They are either artificial or natural, the latter being the more easily produced and the more effective (see 'violin'). Harmonics are rarely used in orchestral music, though a good example occurs in *Siegfried* (see Exs. in Score, p. 10). The following is a table of the natural and artificial harmonics which can be produced from the violoncello. There are more of these which are only possible by means of the thumb positions and a span of a fifth, which may, however, be passed over here since they are so extremely difficult as only to occur in the repertoire, as it were, of the virtuoso.

Harmonics are of 2 kinds: 1. Natural, produced by laying the finger lightly on the string. 2. Artificial, when the thumb or first finger holds down a note and the 3rd or 4th lightly touches the string. The former are the easiest to produce, and the most effective*).

*) See p. 46, No. 11; p. 77.

Natural harmonics.

Sound. 

Method of writing.

A string. D string.

Sound. 

Method of writing.

G string. C string.

Artificial harmonics, with thumb positions and a stretch of a 4th.

Sound. 

Method of writing.

A string. D string.

Sound. 

Method of writing.

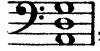
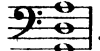


G string. C string.

NB. The sign 9 means that the note is pressed down by the thumb, and the 3 that the 3rd finger is laid lightly upon the string.

The Double-bass (Contrabass).

This, the largest of the stringed instruments, plays a special part in orchestral music in that it usually forms the foundation of the harmony. It is the only member of the family that is a transposing instrument, music being written for it in the bass clef an octave higher than it will sound.

There exist three kinds of double-basses, which vary in the number of strings, the tuning and compass.

The first has but three strings tuned in fourths, thus: , or in fifths, thus . The second has four strings in fourths, thus: . The third, which is rarely found now-a-days, has five strings  a major third and fourths.

Of these three by far the most useful is the second, with four strings, for not only are passages more easily played upon it, but also it has lower notes than that with three strings. The third kind is broader in the neck and therefore not so easily handled. It is occasionally used in German orchestras, and it is a matter for regret that it is not more generally found. The compass of these instruments is:

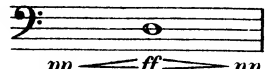
The 3-stringed C-B in 4^{ths} in 5^{ths}.

The 4-stringed C-B in 4^{ths}.

The 5-stringed C-B.



As we have said, the notes sounded are an octave lower than those written, and all chromatic notes are playable. A few higher notes can also be played, but they are not to be recommended, for their tone is not beautiful. The compass of the 4-stringed double-bass is that to which the composer should confine himself.

Every note can be played in all grades of tone from *pp* to *ff* , and scales may be

given *cresc.* or *dim.* in slow or rapid *tempo*; *sfx*, *fx* and *fp* are all playable.



The technique of the double-bass is entirely different from (and infinitely more difficult than) that of the previously mentioned stringed-instruments; yet chromatic and diatonic scales and even chords may be written for it in a great variety of ways. Rapid runs often offer great difficulties, but are rendered easier when in unison or played in octaves with the violoncello. They sound then also clearer.

A player uses the four fingers of his left hand to produce other tones than those of the open strings. The 1st, 2nd, 3rd and 4th fingers are used for the deeper tones, 1, 2, 4 being the signs used; and in the higher positions the 3rd and 4th fingers alone may be used. In order to play the higher tones and difficult passages the player makes use of the seven positions, between which, again, are also seven half-positions. The following are examples of the use the double-bass may be put to in the orchestra:

Mozart. E flat symphony.



1st movement.



IV. movement.

Allegro.



Mozart. C ma symphony.

Satz II. Andante cantabile.

col Viola 8^{va}

Andante.

NB. Such a passage is impossible in one bow *ff*.

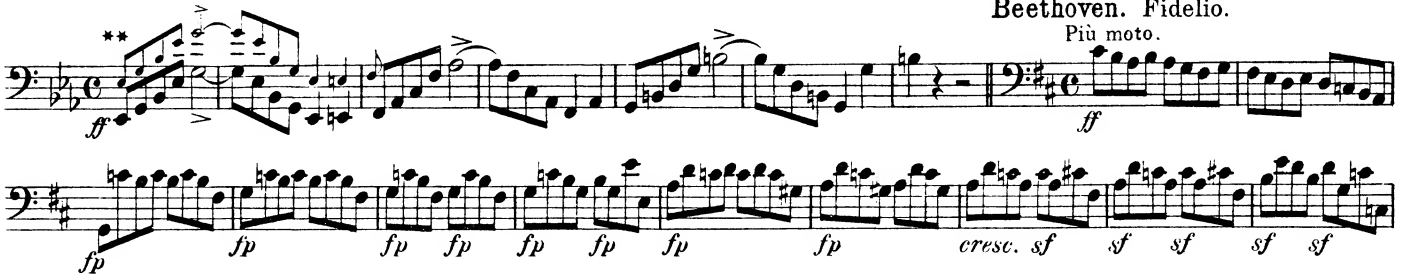
Weber. Ouverture „Freischütz.“

Molto vivace.

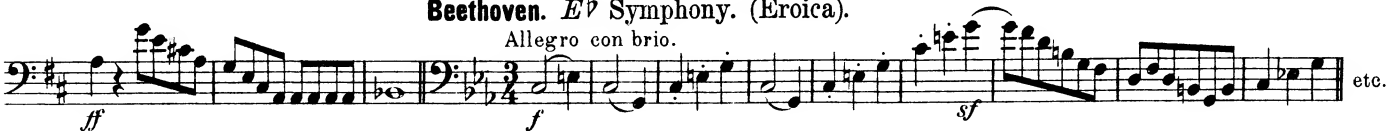
Viol. und Viola 8^{va} higher.

Beethoven. Fidelio.

Più moto.

Beethoven. E^b Symphony. (Eroica).

Allegro con brio.



See also Beethoven "Symphony C mi, Scherzo".

*) Play the small notes.

The Bowing

for the double-bass is shown in a manner similar to that for violin; but not so many notes can be played in one bow as the manipulation of the bow and the technique of the left hand require greater strength. The springing bow and light *staccato* in rapid *tempo* are very rarely used in the orchestra.

Wide leaps are easily effected when one note of the interval comes from an open string, and the two strings are adjoining: Thus



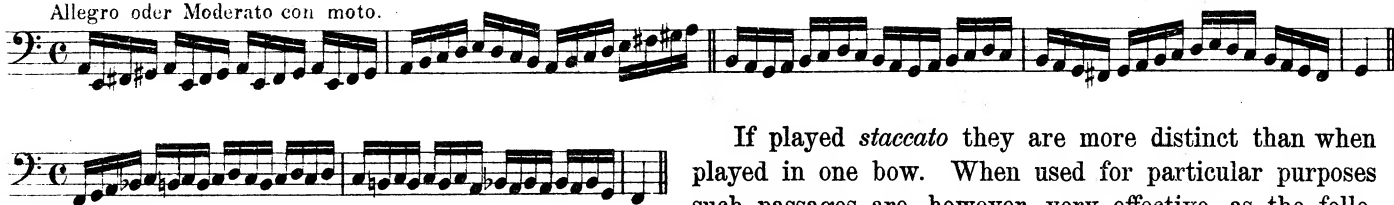
The following (when one or two strings have to be passed over) are much more difficult



Still, they are feasible in slow *tempo*.

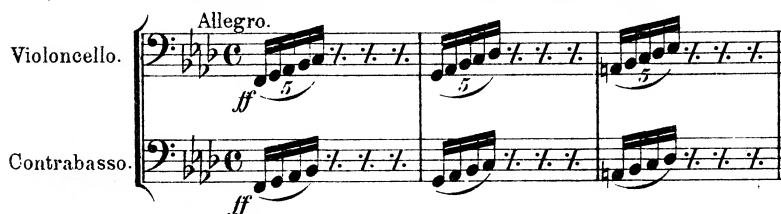
Figures and passages in rapid *tempo* are hardly audible when played upon the lower strings — thus:

Allegro oder Moderato con moto.



If played *staccato* they are more distinct than when played in one bow. When used for particular purposes such passages are, however, very effective, as the following example shows:

Beethoven. Storm in Pastoral symphony.



In order to make difficult and rapid progressions clearer the double-bass part is simplified thus:




3. Mendelssohn. Hebrides Overt.



4. Gade. Overture "Nachklänge aus Ossian".



In works of the older masters the violoncello and double-bass parts were frequently written upon one line,

and it often happened thus that notes came to be written which lay too low even for the 4-stringed double-bass. Whether this was done from motives of convenience to the composer or whether he had basses capable of playing the notes cannot now be decided. Such writing, however, can often lead to curious misrepresentation and effects, not designed by the composer! A passage written thus  can be played in the

following six ways when there is a goodly number of basses.

1. passable 2. bad. 3. bad. 4. bad. 5. passable 6. good




This passage would be played thus if no special manner were mentioned.

The following can be played in seven ways by ready players.

V. Cello &
C. Bass.



But the conductor or the principal bass should decide which method is to be used when such a passage, occurs in an orchestral work.

The deep notes were often written thus  by the older composers as may be seen in the following examples. The small notes are those played*).

Mozart. Symphony *E* flat.
movement I.



Beethoven. Symphony No. 3. *E* flat.
Allegro con briq.



Beethoven. Symphony in *A*.
mov. IV.



Beethoven. Symphonie *C* mi.
mov. IV. 3 mal



Beethoven. Symphony in *A*.
mov. I. Intr.



movement I.

Beethoven. Pastoral-Symphony.



Beethoven. Symphony *D* mi. mov. I.



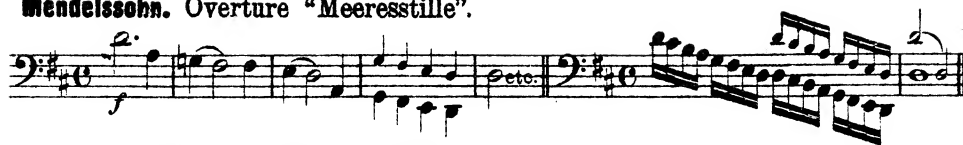
Beethoven. Symphony *D* mi.



Weber. Overture "Freischütz".



*) See pag. 27.

Mendelssohn. Overture "Meeresstille".**In Cherubini. "Les deux journées".**
Andante sostenuto. C string.**Weber. „Der Freischütz“ Cavatine.**

All these examples can be played as written on the five stringed double-bass.

When writing parts for violoncello and bass upon one line care must be taken to specify clearly what each instrument is to play, and to make it difficult for the parts to become mixed in performance. See the following Example.

Musical notation example showing V. Cello and C. Basso parts. It consists of three systems of notation. The first system shows V. Cello and C. Basso parts with a key signature of one sharp (F#) and a common time signature (C). The second system shows V. Cello and C. Basso parts with a key signature of one sharp (F#) and a common time signature (C). The third system shows V. Cello and C. Basso parts with a key signature of one sharp (F#) and a common time signature (C). The notation includes various rhythmic values and rests, with some notes marked "etc.".

Wagner has written the low *E* flat for two basses in *Tristan*, and in the prelude to *Das Rheingold* the whole of the basses have to sustain that note. In Brahms's *Requiem* the low *D* is found at the end of No. 3. In such cases the *E*-string must be tuned down to *E* flat or *D*.

A single player can produce but little effect by sustaining such deep notes owing to the comparative slackness of the string, wherefore the tone is neither very good nor full. Played, however, by several players, the effect is good.

When slow or rapid scales are to be played upon the *E* and *A* strings it is better, in order to induce clearness and accuracy, to allow the violoncellos to play the same notes an octave higher*). Thus



In the reverse case the deep notes of the *C* and *G* strings of the violoncello sound full and powerful when associated with those of the *D* and *G* strings of the bass. Thus:



*) The lower strings of the double bass do not speak so quickly as the higher.

The Tremolo vibrato.

When sustained for not too long a period nor in too rapid a tempo this effect is possible.



Tremolos of long duration require great physical strength, and at best are very tiring. When the *tremolo* is played by a number of basses it is less difficult and exacting; but still easier is it to allow the violoncellos to play the actual tremolo and to give the basses a series of notes of rather higher value, thus:

The tremolo legato is impossible on the double-bass. (See 'Violin', p. 9.)

Moderato.

Allegro moderato.

V. Cello.

C. Basso.

or 3

or

C. Bassi.

Allegro moderato.

Marcia.

Andante Grave.

The Pizzicato

Can be used as upon the violoncello, but as the tone of the higher positions is not very good, it were better to confine the *pizzicato* to notes lying between The best effect is obtainable from the open strings; and as it is more difficult to cause the thick strings to vibrate by plucking them than was the case with the other stringed-instruments, it were better to avoid altogether rapid pizzicato passages for the basses.

Harmonics.

Natural harmonics alone are possible upon the double-bass because of the difficulty of the technique. The following table shows those which are practicable. The lower harmonics are written in the bass clef, the others in the tenor and violin clefs.

Those under No. 1 are the easiest to produce.

Those under 2, 3 and 5 can be played in two ways; those under 4 in four ways.

Verdi uses harmonics for violoncellos and basses in the night-scene on the Nile at the beginning of the 3rd Act of *Aida*.

1. 2. 3. 4. 5.

G string.

D string.

A string.

E string.

When the student has mastered the compass, tone and technical capacity of these stringed-instruments, he may proceed to work at the following chorales, arranging them for string-quartet, quintet, sextet or string-orchestra. The task has been simplified for him by the examples of the original tune and the arrangements which will serve for a guide. The order of the strings in a score may be seen by studying the following examples.

Exercise 1^a.

Arrangement of a Chorale for 4, 5 or 6 stringed-instruments,

(which may be regarded as for a small stringed-orchestra).

Choral. „Nun danket alle Gott.“

Original.

*) The small notes are additional parts.

a)

b)

c)

The arrangements of this Choral as in **a** and **b** require no intellectual effort since they are merely copies of the original four parts. Nevertheless this work is decidedly necessary for the ultimate development of the art of orchestration. In **a** the first and second violins play the treble and alto, the viola the tenor, and the violoncello the bass parts.

Ex. **b**. In order to increase the volume of tone of a string quartet, an additional voice or part is added, which can move between any two parts. Of course it must be derived from the harmony. The student must not confound this with real five part-writing. It is merely the addition of a free part which may come and go at will according as it is desired to increase or decrease the volume of tone, and only if the progression of the other parts admits it. By its means double stopping becomes necessary on the 2nd violin and viola, but only those chords should be used which are easily played by one instrumentalist (see Violin). Ex. **b** shows how this is accomplished, the additional part being marked with a — over or under the note. At the added part doubles the bass.

Ex. **c** shows the same example for five stringed instruments. The bass part is now played by both the violoncello and the double-bass, sounding an octave apart, and besides this the added part strengthens one of the middle voices. The doubling of a part is marked +. The example could be written more simply by omitting the added free part and leaving only the doubled bass.

**) The violoncello and bass parts are written here on one line when both play in unison or the octave.

d)

2 1st Viol. *div.*

Violino II.

Viola.

Violoncello & Contrabasso.

*) The notes marked + are doubled; those - are free parts.

Ex. d shows an arrangement for six instruments. The 2nd violin, viola and double-bass parts are as in exs. b and c, but the melody is now given out in octaves by the 1st violins *divisi*. The added middle part may be omitted and the outer parts only doubled in the octave, yet the effect is better if the free part is retained.

Exercise 1^b.

Before proceeding to the string-orchestra it is advisable to arrange a Choral for three instruments in order to give those who have not mastered one of the family an opportunity for becoming well acquainted with the easy double stopping on the violin and viola.

Choral. Ich weiss, mein Gott, dass all mein Thun.

Original.

etc.

a)

Violino I.

Violino II.

Viola.

etc.

Ex. a is arranged for two violins and viola, the first violin playing the treble, the second the alto and tenor, and the viola the bass. Of Course all Chorales cannot be arranged thus in their original key, for the compass of the viola and second violin would be exceeded. The Choral in such a case must be transposed.

b)

Violino I.

Violino II.

Violoncello.

etc.

Ex. b shows the Choral arranged for two violins and violoncello; it is identical with a except that the bass is played by the violoncello instead of by the viola.

c)

Violino.

Viola.

Violoncello.

etc.

Ex. c. If the Chorale is played by violins, viola and violoncello it is unnecessary to transpose it since the first-named instruments can take the treble and alto parts, the viola the alto and tenor and the violoncello the bass. An added part is marked with a cross +, and is divided between the violins and viola.

Exercise 1^c.

A Choral arranged for full stringed-orchestra.

Choral. Nun danket alle Gott.

Original.

a)

Violino I. Sopr. divisi

Violino II. Alt. div.

Viola. Ten. div.

Violoncello. Bass.

Contrabasso.

b)

Violino I. Sopr. divisi

Violino II. Alt. div.

Viola. Ten. Füllst.

Violoncello. Bass. div.

Contrabasso.

c)

Violino I. div.

Violino II. div.

Viola. div.

Violoncello. div.

Contrabasso.

In Ex. a we find the four original parts doubled in octaves, the melody by the first violins, the alto and the tenor by the second violins and violas, and the bass by violoncellos and double-basses. None of the double stops is difficult for any instrument. Since in the better and larger string-orchestras each part is played by two players at one desk, these players will perform *divisi*, as shown in the score. This must not be taken to mean that a composer may write as he pleases; he should always bear in mind what is practical.

The alto part here might be given to the 2nd violins in octaves, and the tenor to the violas, also in octaves, but the above is the better arrangement as the variety of tone is better mixed.

Ex. b also shows the doubling of the four parts in octaves but with the addition of the free parts, taken by violas and violoncellos. In the second strophe the free parts might be used to strengthen the bass.

In Ex. c the parts are divided as in a, without the free part, but here the melody is strengthened by being played in the deeper octave by the first violoncellos, a good effect when played on the *D* and *G* strings, but not so good if played on the lower strings.

d)

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

In Ex d the added part is confined to one voice and not divided as before among them, and the melody is strengthened by the 1st violoncellos. The treble is played in three octaves by the first violins and violoncello, the alto and tenor by the 2nd violins and violas in octaves; *the added part by the 2nd or 3rd violas*; and the bass by the violoncellos and double-basses.

In the second Strophe the lower viola part strengthens the bass. For a large string-orchestra this

arrangement would be the most effective, powerful and full of all. Such full instrumentation as that in Ex. a, b, c is only applicable for songs of thanksgiving or Chorals.

Of the effect of strings in close and extended harmony.

The pupil has already obtained from the foregoing examples a glance at the position and distance between the various parts. Stringed-instrumental parts should never be very widely separate. Here follow a few examples which show what is good and bad in effect.

a) b) c) d) e) f) g) h) i) k) l) m) n)

Violino.

Viola.

Violoncello.

The chords *a* and *b* sound thin and empty in this position; *c* and *d* are fuller and more compact; *e*, *f*, *g* and *h* sound full, round and solid; *i*, *k*, *l* and *m* are bright yet full; *n* is rather spread out, as it were, by reason of the doubled upper voice.

Of Unison.

The simultaneous sounding by two or more instruments of whatever character of the same note, is called unison. But the term is not used in its strictest sense when mentioned in connection with stringed-instruments. When the same passage is played by several instruments in different *octaves*, the expression 'unison' is used. Thus:

1a) b) c) d) e) f) g) 2a) Maestoso. b) c) d) e)

Viol. I.

Viol. I & II.

Viola.

Violoncello.

Contrabasso.

See Unison part I pp. 48, 52, 53, 55, 57, 58, 59, 65, 70, 73—77, 92. Part III pp. 13, 14, 16, 17. Part V pp. 2, 4, 6, 8, 18, 46.
D. & F. 1

3a) *Maestoso.* b) c) d) 4a)

Violino I & II.

Viola.

Violoncello.

Vcello & Chasso.

b) In octaves. c) In 2 octaves. d) In 2 oct., the lowest being doubled. e) In 3 octaves. f) In 4 octaves.

The effect of all the stringed instruments in unison is a good one when used in the right place, and it can be played in every conceivable manner.

Not infrequently lengthy diatonic or chromatic passages and successions of chords are played by several instruments of somewhat similar character when one lacks the necessary compass; and in order that such passages may sound as nearly as possible as if played upon one instrument they are divided in such a manner that the succeeding instrument takes up the passage from the last note played by its predecessor, thus:

Pianoforte.

Violino I.

Violino II.

Viola.

Violoncello.

or Viol. I.

or Viol. II.

or Viol. II.

D. & F. 1

NB. These passages may be divided between two instruments as the violoncello and viola, or violoncello and violin, but the performance is more difficult.

It is much more difficult for the second instrument to take up the phrase or passage a note after that last played by the first, thus

See Examples in score part I p. 60.

Of the use of dissonant passing and changing notes, or crossing of the parts in the string-quartets of the old and modern masters.

An ornamental part which plays in the same register only the notes of the harmony uttered by the other instruments, even though it crosses and re-crosses them, is clear and distinct to the ear, as is shown in the following example.

Haydn. Quartet G-mi, mov. II.
Largo assai.

Mozart. Quartet D-mi, mov. IV.
Allegretto, ma non troppo.

But an ornamental part which thus crosses the harmony diatonically or chromatically in the same register causes dissonances which are obvious to the eye and sometimes to the ear. Such irregularities are often met with in quartets and orchestral music, but they should be used with care. In slow movements where an ornamental part is played not very rapidly, passing dissonances should be avoided as much as possible. The following examples from the masters show that such things are excellent in effect when the ornamental part is played rapidly.

Haydn. Quartet G-ma, mov. II.
Adagio sostenuto.

Haydn. Quartet B-ma, movement II.
Adagio.

Mozart. Quartet B-ma, movement III.
Adagio.

See also:

Beethoven. Quartet No. 12.
E-flat, movement II.

Beethoven. Quartet No. 14.
#mi, movement I. Adagio.

When the ornamental part with its passing notes differs entirely in character and tone from the other parts, the discord is hardly noticeable in rapid tempo, but in slower time care must be exercised in the writing.

1. Jos. Haydn. Quartet D-flat, movement I.
Allegro.

2. Beethoven. Quartet in E-flat No. 12, movement IV.
Allegro.

The violin clef here sounds 1 octave deeper.

3. Mozart. Quartet G-flat, movement I.
Allegro vivace assai.

4. Schumann. Quartet A-flat. Op. 41. No. 3.
Allegro molto moderato.

See: **Mozart.** Quartet B-flat, movement I. Quartet A-flat, movement III, Menuetto.

Haydn. Quartet G-sharp minor, Finale. Quartet D-flat, movement I.

Beethoven. Quartet No. 14, C-sharp minor. Quartet No. 7, No. 10, E-flat, movement I. Quartet No. 11, F-sharp minor, last movement.

Mendelssohn. Quartet Op. 44, No. 3 E-flat, movement I.

— Quartet Op. 44, No. 1 D-flat, movement IV.

— Quartet Op. 80, F-sharp minor, movement I.

When the ornamental*) part is supported by an instrument in a higher or lower octave the discords are hardly noticeable when the *tempo* is tolerably quick, or at least, not too slow, as will be seen from the following examples.

1. Beethoven. Quartet F-flat. Op. 135.

Vivace.

2. Schumann. Quartet. Op. 42, No. 2, movement I.

Allegro molto vivace.

*) or melody. See p. 70, No. 4.

3. Mendelssohn. Quartet *E*♭ ma. Op. 44, No. 3, movement IV.

Molto Allegro con fuoco.

Violino I.

Violino II.

Viola.

Violoncello.

See also Mendelssohn, Quartet *F*-mi, Op. 80, movement II.

Of the doubling of various intervals in orchestral music.

In a chord of the sixth the bass note (the third of the chord) can only be doubled in unison or in the octave: thus

When it is doubled in three octaves, as in the following example, other notes of the harmony may also be added.

There are many instances where the bass (the third) is doubled in the higher octave, thus

The last, however, is very rarely met with.

When the diminished triad appears in its original form (leading note in the bass), infinitely more care must be exercised in doubling the bass than in the preceding cases; and only very rarely should the augmented fifth (in the augmented triad) be doubled, because of the extreme sharpness of the interval.

The following are instances

The third of the dominant 7th Chord may be freely doubled when the fifth of the scale (the dominant) is in the bass. Thus:

But in the first inversion of this chord the original third (bass note of the inversion) should not be

doubled in the upper or middle parts, though it may in unison or in the octave below thus:



When the bass of this inversion is doubled in three octaves, thus,



other intervals of the harmony may be inserted between the upper and middle notes, thus



In the third inversion of the dominant 7th, the bass note can only be doubled in the lower octave, thus



but when this is three times doubled, as in the following example, other notes of the harmony may be inserted, thus:




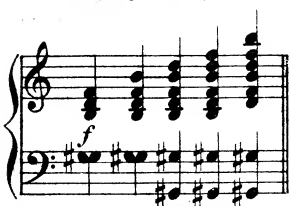
In the second inversion of the same chord, the bass note (the fifth of the harmony) may be doubled in the higher octave, thus:



also



When the chord of the diminished 7th appears in its original form, thus  the bass note, being the leading note, can only be doubled in unison or in the lower octave;



and when three times doubled, other intervals may be inserted thus:



In the first and second inversions



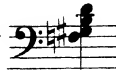
of this chord the doubling of the bass note is used thus



also

or



and in the third inversion  the bass note, being the 7th may only be doubled in the bass, thus:



or in this manner:



In progressions of chords of the 6th the doubling may occur thus:

Doubling of bass. Doubling of outer voice parts.

1a) 1b) 2a) 2b)

Doubling of all voices. Three-fold doubling of the outer parts. 3-fold doubling of all parts.

3a) 3b) 4a) 4b)

The following examples show how progressions of diminished 7^{ths} may be used with doubled intervals.

With Doubled-bass. Doubling of the outer voices. Doubling of the outer voices and one middle voice.


1a) 1b) 2a) 2b) 3a) 3b)

Doubling of all parts. Three fold doubling of outer parts; of all parts.

4a) 4b) 5a) 5b) 6.

Progression in octaves and fifths.

When a melody is played by an instrument whose most effective register lies deep, as the violoncello,

thus,  and the solo part moves between the bass and the upper part of the accompaniment, octaves and fifths often occur, which, though they strike the eye, are not unpleasant to the musical ear, as may be noticed from the annexed examples. In the first and second the octaves are merely the melody doubled. The descending fifths in 2 are unnoticeable because of the distinctive tone-colour of the violoncello; a remark which applies with more force to the ascending fifths in 3, because also of the descending bass.

1. Mendelssohn. Song 22, 'Verlust', bars 30—34. Allegro con fuoco. 2. Mendelssohn. Song 38, 'Morgengruss', bars 6—8. Andantino. 3. Giovanni. Song. 'Willst du dein Herz mir schenken'. Bar 6. Andante.

Violoncello. Piano

ein. Sie al-le könnennicht wis-sen, nur fern. Mein Liebchen mein Lamm meine Sonne und zeit verschwiegen sein drum

D. & F. 1

Of the use of stringed-instruments in orchestral music.

The first violin can be used thus in the orchestra:

- 1) As solo instrument alone or with other violins or instruments.
- 2) To play the melody.
- 3) To strengthen the melody (in unison or in the higher octave).
- 4) To play a subsidiary melody.
- 5) For decorative purposes.
- 6) For accompaniment.
- 7) To render the harmony full.
- 8) To lead the bass (rare).
- 9) To accentuate chords sharply.

The second violin, from which so much technical dexterity is not asked, is generally used in the 3, 4, 5, 6, 7, 8 and 9 ways.

The viola can be used in all the nine ways, but those under 4, 5, 6 and 7 are most generally called for.

To the violoncello also the same remark applies, but the 8, 7, 5, 4, 3, 2, 1 and 9 are general in the order given.

The double-bass is rarely used for any other purpose than to strengthen the bass, though it occasionally plays the melody.

Of the Grouping of stringed-instruments.

- 1) The violins may be 1, 2, 3, 4 or more times divided in the orchestra, as also may the violas and violoncellos.
- 2) 2 violins and viola.
- 3) 2 violins and violoncellos.
- 4) 1 violin, viola and violoncello.
- 5) viola, violoncello and double-bass.
- 6) violoncello and double bass.
- 7) 2 violins, viola and violoncello.
- 8) 1 violin, 2 violas and violoncello.
- 9) 2 violins, viola, violoncello and double-bass.

Of the contrast of various stringed-instruments.

Contrast may be produced: 1) By the different tuning of the instruments, as well as by the tone-colour of the pitch of each several instrument. 2) By the multiplicity of grades of tone which lie between the most delicate *p*, and the strongest *f*. (*pp*, *p*, *mf*, *f*, *cresc.*, *dim.* etc.) 3) By the different methods of playing — as *legato*, *staccato*, *arco*, *pizz.* etc.). 4) By means of rhythm and accompaniment (in crotchets, quavers, triplets etc.).

See Exs. in Score for such contrasts, parts I, III, V, VI, VII.

A study of the examples in score will show these contrasts far better than they can be explained in words. The examples, selected from the works of old and new composers, show, too, in how many ways the stringed-instruments form an independent orchestra. May they and the preceding exercises afford the student a glimpse of the manner of using, grouping and contrasting the strings, that his subsequent labour be facilitated.

Examples in score.

The strings alone used orchestrally in 2, 3, 4 and more parts.

1. Jos. Haydn. Symphony in D. (La Chasse) 4th movement.

La Chasse.

Violino I. *p*

Violino II. *p*

See also 1st movement.

2. Mozart. Symphony in C.

Allegro.

Viol. I. *p*

Viol. II. *p*

See also E flat symph., 4th mov. and the Allegro in Mozart's Overture to Il Nozze di Figaro.

3. Beethoven. Symphony in A, 2nd movement.

Andante.

Violino I. *p* *pp*

Violino II. *p* *pp*

See also Symphony in B flat, 2nd movement, and Ex. 44 b.

4. Meyerbeer. Overture Dinorah*).

Allegro animato.

Violino I. *pp*

Violino II. *pp*

cresc. poco a poco *dimin. poco a poco*

5. Svendsen. Symphony in D, op. 4, 4th movement.

Allegro assai con fuoco.

See also Les Huguenots, Act II.
By permission of the publisher E. W. Fritzsch, Leipzig.

Violino I. *ff div.* *f* *pp*

Violino II. *ff div.* *f* *pp*

6. Haydn. Symphony in B flat. (Peters's Edn. 6)

Largo.

Violino I. *p* *dimin.* *pp*

Violino II. *p* *dimin.* *pp*

Viola. *p* *dimin.* *pp*

*) By permission of the publishers Bote & Bock.

7. Beethoven, Symphony in F, 4th movement.

Allegro vivace.

Violino I. *pp*

Violino II. *pp*

Viola. *pp*

Fl. Hob.

più p

ppp

più p

ppp

ppp

8. C. M. v. Weber. Overture Euryanthe.

Largo. con sordini

Violino I & II. *pp*

Violino III & IV. *pp*

Violino V & VI. *pp*

Violino VII & VIII. *pp*

Viola. *pp*

con sordini

con sordini

con sordini

con sordino

9. Mendelssohn-Bartholdy. 'A Midsummer Night's Dream', overture.

Allegro di molto.

Violino I. *pp*

Violino II. *pp*

Viola. *pp*

sempre staccato

sempre staccato

sempre staccato

sempre staccato

10. R. Wagner. Prelude to Lohengrin. (*natural.*)

By permission of Breitkopf & Härtel.

Adagio. 8

2 Fl.

2 Hrn.

4 violins.

the remaining violins in 4 equal parts.

10. H. Wagner: Prelude to Der Ring des Nibelungen (Naurat.)

4 violins
alone.

violins
alone.

The musical score for Violins I and II, measures 10-15, is shown. The key signature is three sharps (F#, C#, G#) and the time signature is 4/4. The score includes dynamic markings such as *dim.* (diminuendo), *p* (piano), *pp* (pianissimo), and *trem.* (tremolo). The notation features various musical symbols including notes, rests, and slurs.

*p Harmonics.

***) From here all the violins in 4 equal parts.

11. Wagner. 'Siegfried', page 269 of full score.

1. desk. *p trem.*

Violino I. 2. desk. *p trem.*

Violino II. 1. desk. *p trem.*

2. desk. *p trem.*

Viola. 1. desk. *p Harmonics.*

2. desk. *p Harmonics.*

The voice of the bird. Heil Siegfried er-schlug nun den schlimmen Zwerg! Jetzt wüsst ich ihm noch das herrlichste Weib.

Violoncello. 1. desk. *p Harmonics.*

2. desk. *p*

12. Jos. Haydn. Oxford symphony, 4th movement.

Presto.

Violino I. *p*

Violino II. *p*

Violoncello. *p*

13. Jos. Haydn. Symphony in D (Peters's Edn. No. 3) 1st movement.

Presto.

Violino I & II. *p*

Viola. *p*

Violoncello & Contrabasso. *p*

14. Weber. 'Preciosa', Song No. 6.

47

Larghetto.
pizz.

Violino I & II. *p pizz.*

Viola. *p pizz.*

Preciosa.

Violoncello. *p pizz.*

Einsambin ich nicht al-lei-ne, denn es schwebt ja süß und mild

15. Jos. Haydn. E flat symphony (Peters's Edn. No. 1.) 1st movement.

Allegro con spirito.

Violino I. *p*

Violino II. *p*

Viola. *p*

Violoncello. *p*

C. Bass.

16. C.M.v.Weber. „Der Freischütz“ Act II.

Adagio.
con Sordini

Violino I. *pp* *div.*

Violino II. *pp* *div.*

Viola. *pp*

Agathe. *pp*

Violoncello.

Lei - se, lei - se, from - me Wei - se, schwing' dich auf zum Ster-nen - krei - se!

Lied er - schalle, fei - ernd wal-le mein Ge-bet zur Himmels-hal - le.

pp *p*

17. Rob. Volkmann. Symphony in B flat, No. 2, 2nd movement.

Allegretto

Violino I. *p* *sf* *sf* *sf* etc.

Violino II. *p* *sf* *sf* *sf*

Viola. *p* *sf* *sf* *sf*

Violoncello. *p* *sf* *sf* *sf* etc.

18. Beethoven. Eroica symphony, 3rd movement.

Adagio assai.

Violino I. *f* *p*

Violino II. *f* *decresc.* *p* *pp*

Viola. *pp*

Violoncello. *c.B.* *pp*

Ob. *b2*

Clar. *b2*

sf *cresc.* *decresc.* *pp*

sf *cresc.* *decresc.* *pp*

Clar. Fag. *pp*

Cor. *pp*

cresc. *decresc.* *pp* *c.B.*

19. Beethoven. C minor symphony, 2nd movement.

Andante con moto.

Viola. *p dolce* *f* *p*

Violoncello. *p dolce* *fz* *p*

Contrabasso. *pizz.* *p* *f* *p*

20. Beethoven. A major symphony, 2nd movement.

Allegretto.

Viola. *ten.* *p*

Violoncello I. *ten.* *p*

Violoncello II. *ten.* *p*

Contrabasso. *p*

21. Mendelssohn. Hymn of Praise, No. 9.

Andante sostenuto assai. (♩ = 100.)

Viola. *p*

Tenor Solo. *p*

Violoncelli. *divsi* *p*

Contrabasso. *p*

Drum sing'ich mit mei-nem Lie-de e-wig dein Lob, du treuer Gott, drum sing'ich mit mei-nem Lie-de e -

- wig dein Lob, o Gott! und dan-ke dir für al - les Gu-te das — du an mir ge - than, das — du an mir ge -

than. Drum sing'ich mit mei-nem Lie-de dein Lob, — du treu-er Gott, e - - wig du treu-er Gott.

cresc. *sf* *p* *sf* *p*

*) From here soprano solo,
2 flutes, 2 bassoons and strings.

22. C. M. v. Weber. Pianoforte concerto in C, op. 11, 2nd movement.

Adagio.

Viola. *pp*

Violoncelli. *pp* *divisi*

Contrabasso. *pp*

Pianoforte

23. Mendelssohn. St. Paul (No. 4, duet).

Viola. *mf* *sf*

Basso I Solo. *mf* *sf*

The false Witnesses. Wir haben ihn gehört Laster - worte re - -den, Laster - worte re - -den wi - der

Basso II Solo. *mf* *sf*

Wir haben ihn gehört Laster - worte re - -den

Violoncello I. *p* *sf* *p*

Violoncello II. *p* *sf* *p*

Contrabasso. *p* *sf* *p*

sf *p* *sf* *p*

die - se heil - ge Stät - te, wi - der die - se heil - ge Stät - te und das Ge - setz, wir ha - ben

und das Ge - setz, und das Ge - setz!

sf *p* *sf* *p*

ihn ge-hört, wir haben ihn ge-hört Lä - sterwor-te re - den wider diese heil'ge Stät - te und das Ge - setz.

Wir haben ihn gehört Lä - sterwor-te re - den, wider diese heil'ge Stät - te und das Ge - setz.

24. Beethoven. 'Fidelio', No. 3, Quartet.

Andante sostenuto.

Viola I & II. *sempre p* *cresc.* *mf* *p* *pizz.*

Violoncello I & II. *p* *pizz.*

Contrabasso. *p*

25. Rossini. Overture to 'Tell'.

(By permission of Schott, Mainz.)

Andante.

Violoncello I. *p*

Violoncello II. *pp*

Violoncello III. *pp*

Violoncello IV & V. *pp*

26. Rossini. Overture to 'Tell'.

Andante.

Violoncello I. *p*

Violoncello II. *pp*

Violoncello III. *pp*

Violoncello IV & V. *pp*

Contrabassi. *pizz.*

27. Beethoven. 'Coriolanus' overture.

Violino I. *ten. p*

Viola. *ten. p*

Violoncello
&
Contrabasso. *p*

Viol. II. *ten.*

Viol. III. *ten.*

28. Franz Schubert. 'Rosamunde' overture.

Allegro vivace.

Violino I. *pp*

Violino II. *pp*

Viola. *pp*

Violoncello
&
Contrabasso. *pizz. pp*

29. Jos. Haydn. Symphony in D (Peters's Edn. No. 2). 1st movement.

Allegro.

Violino I. *p*

Violino II. *p*

Viola. *p*

Violoncello
&
Contrabasso. *p*

30. Beethoven. 'Prometheus' overture.

Allegro molto con brio.

Violino I. *pp*

Violino II. *pp*

Viola. *pp*

Violoncello
&
Contrabasso. *pp*

31. L. v. Beethoven. C major Symphony No. 1, 4th movement.

Allegretto molto e vivace.

Violino I. *p*

Violino II. *p*

Viola. *p*

Violoncello & Contrabasso. *p*

Vell.u. Fag. *p*

32. Fr. Schubert. C major Symphony No. 7, 2nd movement.

Andante con moto.

Ob. I Solo.

Viol. I. *p*

Viol. II. *p*

Viola. *p*

V. Cello. & C. Basso. *p*

Cor. 7 2 Cor. 7 7 7 7 7 7

33. L. v. Beethoven. Eroica Symphony, 2nd movement.

Marcia funebre.

Adagio assai.

Violino I. *p*

Violino II. *pp*

Viola. *pp*

Violoncello. *pp*

Contrabasso. *pp*

sf

34. Fr. Schubert. B minor (unfinished) Symphony, 1st movement.

Viol. I. Allegro moderato.

Ob. u. Clar. *pp*

Viol. II. *pp*

Viola. *pp* pizz.

Vello. & C. Basso. *pp* pizz.

35. R. Wagner. 'Tannhäuser'. Act II.

Moderato.

Violino I. *p*

Violino II. *p*

Viola. *p*

Violoncello & Contrabbasso. *p*

36. C. M. v. Weber. 'Preciosa' overture.

Allegro moderato.

Violino I. *pp*

Violino II. *pp*

Viola. *pp*

Violoncello *pp*

Contrabbasso. *pizz.* *pp*

37. Rob. Volkmann. Serenade (op. 63) in F, 3rd movement.

Allegretto moderato.

Violino I. *p*

Violino II. *p* *div.*

Viola. *p* *divisi*

Violoncello & Contrabbasso. *p*

38. W. A. Mozart. G minor Symphony 1st movement.

55

Allegro molto.

Violino I.

Violino II.

Viola.

Violoncello
&
Contrabasso.

Fl.

Ob.

Fag.

See also Haydn Symphony in D, No. X, movements II and IV.

39. Beethoven. 'Leonore III' overture.

Allegro.

Violino I.

Viola.

Violoncello
&
Contrabasso.

div.

40. Franz Schubert. 'Rosamunde' overture.

Andante.
div. 2

Violino I.

Violino II.

Viola.

Violoncello
&
Contrabasso.

Hob.

Fag.

41. Mendelssohn. 'St. Paul' (No. 6).

Allegro (Quasi Recitativo).

Violino I. *trem.* *p* *cresc.* *ff*

Violino II. *trem.* *p* *cresc.* *f* *ff*

Viola. *trem.* *p* *cresc.* *f* *ff*

Tenore-Solo. Der Him-mel ist sein Stuhl und die Er-de sei-ner Fü-sse Schemmel. Hat nicht sei-ne

Violoncello & Contrabasso *coll'Organo* *p* *cresc.* *f* *ff*

Allegro molto.

ff *sf* *sf* *sf*

Recit. Hand das Al-les ge-macht? Ihr Halsstar-ri-gen!

senza Organo *ff* *sf*

42. Fr. Schubert. C major symphony, 2nd movement.

Andante.

Violino I u. II. *pizz.* *pp* *ob. I.*

Viola. *pizz.* *pp*

Violoncello. *pizz.* *pp*

Contrabasso. *pizz.* *pp*

43. Cherubini. 'Anacreon' overture.

Allegro.

Violino I. *p*

Violino II. *p*

Viola. *divisi* *p*

Violoncello & Contrabasso *p*

*) Read the alto clef.

A musical score for the song 'The Rose Tree'. The score is written for four staves: Treble Clef (Right Hand), Treble Clef (Left Hand), Bass Clef (Right Hand), and Bass Clef (Left Hand). The key signature is one sharp (F#). The time signature is 4/4. The melody is in the Treble Clef (Right Hand). The accompaniment is in the Bass Clef (Right Hand) and Treble Clef (Left Hand). The score consists of 8 measures. The melody is: G4 (quarter), A4 (quarter), B4 (quarter), C5 (quarter), B4 (quarter), A4 (quarter), G4 (quarter), F#4 (quarter). The accompaniment in the Bass Clef (Right Hand) is: G3 (half), A3 (half), B3 (half), C4 (half), B3 (half), A3 (half), G3 (half), F#3 (half). The accompaniment in the Treble Clef (Left Hand) is: G4 (half), A4 (half), B4 (half), C5 (half), B4 (half), A4 (half), G4 (half), F#4 (half).

44. Beethoven. 'Leonore III' overture.

Presto.

Presto.

Violino I.

cresc. poco a poco

Violino II.

Viola.

Violoncello
&
Contrabbasso.

Musical score for "The Song of the Lark" by Franz Schubert, measures 1-7. The score is for four staves: Treble 1, Treble 2, Bass 1, and Bass 2. Measures 1-6 show a gradual increase in volume, marked with "cresc." and "ff". Measure 7 shows a final chord with "ff" marking.

45. Mozart. *C* major symphony, 4th movement.

Allegro molto.

46. Beethoven. Eroica symphony, 4th movement.

Allegro molto.

Viol. I. *Fl.*

Viol. II. *pp*

Viola. *Corni.* *pp*

Vcello. *s*

C. Basso.

2 Fl.

sf

p

cresc.

cresc.

cresc.

cresc.

Cor.

Cor.

47. Mozart. Overture to 'Il Nozze di Figaro'.

Presto.

Violino I & II. *pp*

Viola. *pp*

Violoncello & Contrabasso. *pp*

48. Beethoven. Eroica symphony, 4th movement.

Violino I. *ff*

Violino II. *ff*

Viola. *ff*

Violoncello & Contrabasso. *ff*

50. Franz Liszt. *E flat pianoforte concerto, 1st movement.*49. Beethoven. *Eroica symphony..(Eroica.)*

Viol. I. *pizz.*
p

Viol. II. *pizz.*
p

Viola. *pizz.*
p

V. Cello & C. Basso. *pizz.*
p

Allegro moderato.

Viol. I. *ff*

Viol. II. *ff*

Viola. *ff*

V. Cello & C. Basso. *ff*

Wood-wind.

Cor. Trmp.

Fag. pos.

51. R. Volkmann. *D minor symphony, 1st movement.*

Allegro patetico.

Violino I, II & Viola. *f*

Violoncello & Contrabasso. *f*

2 Clar.

2 Fg. 2 Cl.

52. Joh. u. Jos. Strauss. 'Pizzicato-Polka'.

Più moderato.

Violino I. *pizz.*
pp divisi

Violino II. *pizz.*
pp

Viola. *pizz.*
pp

Violoncello. *pizz.*
pp

Contrabasso. *pizz.*
pp

Later in this polka wood and bass instruments are introduced.

53. Delibes. 'Pizzicato' from 'Sylvia' ballet-suite, No. 3.

Allegretto moderato.

Violino I. *pizz.*
p

Violino II. *pizz.*
p

Viola. *pizz.*
p

Violoncello. *pizz.*
p

Contrabasso. *pizz.*
p

54. Beethoven. 4th Symphony, 2nd movement.

Adagio.

Flöte.
2 Hoboen.
2 Clarinetten.

Violino I u. II.

Viola.

Violoncello
&
Contrabasso.

Fl. Clar.
Fag.
Cor.
pizz.

di - mi - nu - endo

smorz

smorz.

pp

55. Mendelssohn. Scherzo from 'A Midsummer Night's Dream'.

Allegro vivace.

Flöte.

Violino I.

Violino II.

Viola.

Violoncello
&
Contrabasso.

2 Flöten.

pizz.

Vell. 7

Progressions divided among several instruments, cf. also Pt. III p. 15; violin I and viola, pt. V p. 32.

As in the next exercises only compositions originally written for the pianoforte will be arranged for strings, the student must take care in choosing such pieces for himself, for all are by no means adaptable to such treatment. To help him in the selection a few pieces are mentioned after each exercise. He need not be prevented from arranging his own pieces or from composing for stringed orchestra; but it is undeniably better at first to experiment upon the works of the acknowledged masters since the necessity for remaining true to the original affords good training. In such work much freedom is allowed in that, generally speaking, more may be added than omitted**).

The same added part, doubling of the bass, of the soprano in the higher octave, of the other parts (which does not often occur in the stringed orchestra) as were pointed out in the arrangement of Chorales, may also be used here.

** 1) In certain cases a piece may be transposed. 2) The melody or bass may be doubled, the former in the higher or deeper octave, the latter in unison or in the lower octave. 3) Strengthening and even adding to the middle parts. 4) Compulsory alteration of the form of the melody and accompaniment in order to render it more practical and effective. 5) Interpolation of a new, (if not always independent part etc.) But great care must be taken that the original is not obscured or misrepresented by these addition and omissions.

The following pieces should be played from score by the student to give him a clearer insight into score-reading.

Fuchs, R. 3 Serenades, op. 9, op. 14, op. 21.

Volkmann. 3 Serenades for strings.

Grimm. Serenade in Canon.

Gade. Noveletten for strings.

Reinecke. Prelude (to 4th Act) of 'Manfred'.

Wagner. Opening of the Siegfried Idyll.

Gouvy. Swedish Dance from the octet (arranged for orchestra).

Schumann, R. 'Bilder aus Osten' (arranged for orchestra).

Vogt, J. Nachtgesang.

Dittersdorf. String quartets.

Haydn.

Mozart.

Exercise II.

Small pianoforte pieces arranged for string-orchestra.

1. Kuhlau. Sonatina, op. 20, 2nd movement.

Audante.

The musical score is arranged for five parts: Piano, Violino I, Violino II, Viola, and Violoncello. The time signature is 6/8 and the key signature has one flat (B-flat major). The tempo is marked *Audante*. The score is divided into three systems. The first system shows the initial entry of the piano and strings. The second system features a crescendo leading to a forte section. The third system includes a decrescendo followed by a return to piano and dolce markings. The piano part includes grace notes and a final chord. The string parts have various rhythmic patterns, including sixteenth-note runs and sustained chords.

This piece offers no difficulties in its arrangement for string-quartet, since in its original form it is, as it

were, orchestral in character. An immoderate use of added parts or notes is inadvisable because of the danger of destroying the simplicity of the piece; yet certain parts must be strengthened, which in no way injures the movement as a string-quartet.

It is unnecessary to point out here the added notes since the arrangement can be studied with the original above it. Note, however, should be taken of the doubling in the octave when the melody begins anew. Were it given to the violoncellos only it would sound thin and poor by comparison, and therefore the violas are added in the higher octave. In bars 3 and 4 of the second part notes are added in the middle voice, and in the following two bars the bass is doubled. Thus the two voices or parts sound fuller.

2. Kuhlau. Sonatine, op. 55, No. 2, 2nd movement.

Cantabile.

Piano. *p legato* *mf*

Violino I. *p* *mf*

Violino II. *p* *mf*

Viola. *p* *mf*

Violoncello. *p* *mf*

This cantabile movement, which is its original form is pure and simple pianoforte music, must be arranged differently from the preceding example since an exact reproduction of the pianoforte part for strings would be very amateurish. Thus the violas take the figure of accompaniment, the 2nd violins the added part to make it full, the violoncellos the bass, and the 1st violins the melody.

In bar 12 the 2nd violin strengthens the 1st violin by playing the same part an octave lower, and in bar 15 the chord in the bass is strengthened similarly by the violas. In the penultimate bar it is not possible to keep strictly to the text since not only is a progression in fifths difficult for two violins in the higher octave, but also the effect is not very good. The piece can also be arranged thus, as in *a*, *b* or *c*.

The following pieces may also be arranged for string-quartet or quintet (2 violins, viola, 2 violoncellos, or violoncello and double-bass):

Clementi. Sonata, op. 36, No. 1, 2nd movement.

— — op. 36, No. 4, 2nd „

Haydn. Sonata in *G* (Peters 11) 1st „

— — in *G* („ 11) 2nd „

— — in *C* („ 5) 3rd „

Mozart. Sonata in *G* („ 14) 1st „

— — in *C* („ 2) 2nd „

— — in *F* („ 11) 2nd „

Mozart. Sonata *E* flat (Peters 9) 1st movement } Minuet
— — *E* flat („ 9) 2nd „ } I and II.

Beethoven. Op. 33. Bagatelle 1 and 3.

— Op. 49, 1st movement, No. I.

— Op. 49, 1st „ No. II.

— Op. 27, 2nd „ No. II.

Schubert. Frz. Op. 94, No. 3 and 6.

Cf. also Sonatinas by Kuhlau and J. Schmidt.

Exercise III.

Various arrangements of themes for string trio or quartet.

1. Kuhlau. Sonatina. Op. 55, No. 5. 2nd movement.

Allegro.

Piano. *p*

a)

Violino. *p*

Viola. *p*

V.Cello. *p*

b)

Violino I. *p*

Violino II. *p*

Viola. *p*

V.Cello. *p*

c)

Violino I. *p*

Violino II. *p*

Viola. *p*

V.Cello. *p*

d)

Violino I. *p*

Violino II. *p*

Viola. *p*

V.Cello. *p*

e)

Violino I. *p*

Violino II. *p*

Viola. *p*

V.Cello. *p*

The various arrangements of a theme or movement for string-trio or quartet is a study that should by no means be disregarded; and therefore the following examples have been arranged in this manner.

Exs. a and b follow the original tolerably strictly, the 1st Violin taking the melody, the viola the accompanying figure transposed so that the harmony may sound fuller, the alteration of the bass from the 4th bar relieves the monotony that would otherwise accrue. The bass can begin thus



or the 8 bar phrase be arranged thus, the 1st violin still retaining the melody:

bars 1—3. bar 4. bar 5.

Viola.

V.Cello.

Ex. b shows the phrase for quartet. There is nothing to remark here save that the 2nd violin fills up the harmony with double notes on the first and second beats.

Ex. c will be both fuller and more piquant since the 2nd violin plays a figure rhythmically similar to that of the viola, the harmony becoming rounder thereby. The violoncello deviates from its previous path only in that from bar 4 it plays the fundamental note of the harmony on the 1st and 2nd beats. It can, however, be written as before in Exs. a and b. The accompanying figure in quavers can be played legato or staccato, the latter rendering it fresher and more lively.

In Exs. d and e the accompaniment is entirely different from the original; and neither should be rejected although they are more commonplace, and suggestive of a dance rhythm. In many other ways, too, the example may be arranged with more freedom, but with them we have at present nothing to do. When a similar passage occurs three or four times in a rondo, care must be taken that the general musical interest is heightened each time the theme recurs. This in a slight way may be seen by playing the examples in this order: a, d, b, e, c. The next example is taken from a sonata by Beethoven. The following pieces may serve the student for exercise in scoring.

- Clementi. Sonata, op. 36. 1st mov. Bars 1-8. No. 2.
 " " " 36. 3rd " " 1-8. " 2.
 " " " 37. 1st " " 1-8. " 1.
 Kuhlau. Sonatina, " 56. 1st " " 1-8. " 3.
 " " " 55. 1st " " 1-8. " 4.
 " " " 55. 1st " " 1-12. " 6.
 " " " 88. 3rd " " 1-8. " 1.
 " " " 88. 3rd " " 1-8. " 2.
 Haydn. Sonata in D, 3rd mov. (presto) Bars 1-8.
 " " " E min. 3rd mov. (molto vivace) B. 1-8.
 Mozart. Sonata in A, 3rd mov. (rondo) Bars 1-8.
 Beethoven. Sonata, op. 13. 3rd mov. Bars 1-8.

2. Beethoven. Sonata, op. 49, No. 2, 2nd movement.

Tempo di Menuetto.

Piano. *p*

a)

Violino. *p*

Viola. *p*

V. Cello. *p*

b)

Violino I. *p*

Violino II. *p*

Viola. *p*

V. Cello. *p*

c)

Violino I. *p*

Violino II. *p*

Viola. *p*

V. Cello. *p*

d)

Violino I. *p*

Violino II. *p*

Viola. *p*

V. Cello. *p*

e)

Violino I. *p*

Violino II. *p*

Viola. *p*

V. Cello. *p*

In Ex. a the 1st violin plays the melody the viola the quaver figure, and the violoncello the bass. An alteration is made in every second crotchet in the accompaniment, where, a note of the harmony is added in the viola part, the violoncello playing short crotchets.

In Ex. b the passage is arranged for a quartet, the melody and quaver figure remain as before, but the latter is now taken by the 2nd violin. A part is added for viola, and the violoncello, though playing the same notes as before, phrases them differently.


In Ex. c the unaccented part of the bar in strengthened by the addition of notes of the harmony — a liberty we allow ourselves because Beethoven has himself done the same thing in the minuet (same theme) of his septet. In bars 1—4 the bass is strengthened by the help of the violoncello playing in the lower octave, and from bars 4-8 the 2nd violin takes up the melody of the 1st violin, which now plays it an octave higher. The viola plays (bars 4—6) the accompanying figure of the 2nd violin and the violoncello still plays the bass in the lower octave.

The arrangement of d is a copy of the first for 3 instruments with the difference that the 1st violin plays a free ornamental part.

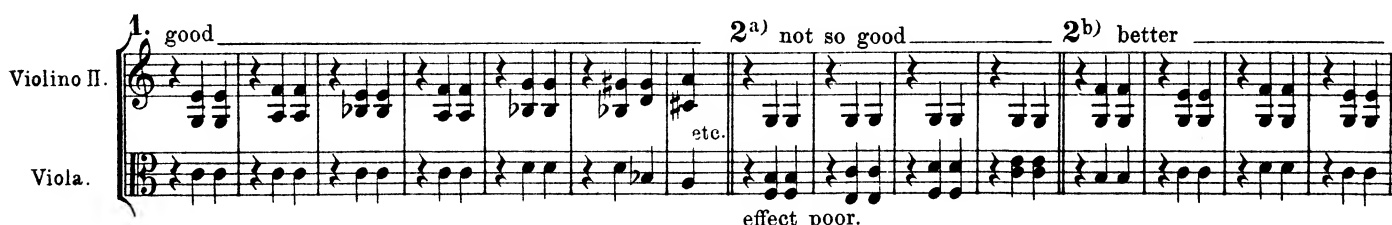
In Ex. e the viola takes up the melody, while the 2nd violin and violoncello play the accompanying figure, the 1st violin still playing the ornamental independent part.

A few remarks before beginning the following exercises.

In music of a lighter type the 1st violin is generally used to play the melody, whose compass should rarely exceed *e*, *f* or *g* in alt. But it is sometimes used to accompany or for decorative passages when the melody is played by another instrument or sung by a voice. Double notes are frequently employed, in 3rds, 6ths or 8^{ves}, but when this occurs, two players, as a rule, are intended to play them, and the word *divisi* should always be written.

The 2nd violin and viola take the accompaniment usually in chords in three and four parts (except in the idealized dance-forms). In writing such chords care should be taken that they are easily playable (cf. double-stopping, under 'Violin' and 'Viola'). The compass of the accompanying parts (2nd violin and viola) in the next exercises lies, with a few exceptions, between  If the chord is of three notes, the 2nd violin

will usually take the interval that is playable by double-stopping, while the viola plays the single note, thus:



In example 1 and 2b as well as in the following arrangements 1—8 it will be noticed that the 2nd violin (with rare exceptions) takes the chief intervals of the harmony, while the viola plays the fundamental or fifth. Example 2a is of bad effect because of the deep position of the notes: 2b is much better.

When chords of four notes fall on the weak beats, they are divided so that each instrument (2nd violin and viola) plays two notes, thus:



Here the 2nd violin is treated as before, but by using double notes in the viola part the addition of omitted intervals or doubling of same note in unison or in the upper or lower octave becomes necessary, whereby the harmony is fuller and richer (see examples).

In practice entire movements are not (as in 1, 2b and 3a) written in three parts or in four, but there are mixed as:



Chords of three or four notes for one instrument generally occur in *f* or *ff* to accentuate either the strong or the weak beat. The greatest power is attained by writing these chords practically, so that a player can play them with perfect ease, thus:

Chords of 4 notes to be used only
where the tempo is not too rapid.

Violino II.

Viola.

For the manner of using triple stopping for violins and viola, see the following examples on p. 73, Nr. 7 and 8.

When precisely the same bars are to be repeated the fact is stated by means of this sign, so that trouble is saved thereby in writing: thus

The Violoncello can be used thus in dance music:

- 1) To strengthen the bass in unison or the higher octave.
- 2) For an independent melody or to strengthen the melody in unison or in the lower octave.
- 3) For purposes of ornamentation (arco or pizz.) or to play a subsidiary melody.

Each of these may be seen in the following examples. Double and triple stopping is here rarely used on the violoncello.

The Double-bass lends, as it were, support to the harmony and rhythm in dance-music on the strong beat. Exceptions (especially to the latter) are found at the close of the parts of a dance as well as at the beginning, thus:

1) At the end of a part

- 2) At the beginning, where a rest is used

- 3) When the violoncello and double-bass have the melody and the other instruments play an accompaniment in the higher octave. (See example on p. 73, Nos. 7 and 8).

Here follow some transcriptions for string-quintet or string-orchestra of dances, marches etc.

Exercise IV.

Dances for string-quintet or string-orchestra.

1. Franz Schubert. Deutsche Tänze, Op. 9. № 19.

[illegible]

2. Johann Strauss (père), Sperl-Polka.

Here the 1st violin takes the melody as in the original: the 2nd violin and viola play the accompaniment on the second and third divisions of the bar, in a higher register than the original, and with certain additional notes for the purpose of fullness. The higher register is used for the better effects, the lowest notes of the original being not good on the viola. In the second part, bars 1 and 2, the accompaniment, on the other hand, is lower than the original, otherwise the effect would be thin. The remaining bars are much the same as in the original, the violoncello and double-bass marking the rhythm in unison and in octaves. When the latter parts are written on one line, double notes (see example) should be used to facilitate reading.

In the 1st violin parts double-stops occur, to be played *divisi* — i. e. by two players. The accompaniment is not like that of a quick march, and is tolerably true to the original. The violoncello and double-bass play the fundamental tone in octaves. The letters *a—f* mean that the bars so lettered are to be repeated — a common practice in such works. Numbers are sometimes used.

[illegible]

The musical score for 'The Rose Tree' is presented in two systems. The first system consists of a grand staff with a treble and bass clef. The treble staff begins with a treble clef, a key signature of one flat (B-flat), and a common time signature (C). The bass staff begins with a bass clef, a key signature of one flat (B-flat), and a common time signature (C). The music is marked with a piano (p) dynamic. The second system also consists of a grand staff, but the treble staff is marked 'divisi' and the bass staff is marked 'p'. The treble staff begins with a treble clef, a key signature of one flat (B-flat), and a common time signature (C). The bass staff begins with a bass clef, a key signature of one flat (B-flat), and a common time signature (C). The music is marked with a piano (p) dynamic. The score is written in a style typical of 19th-century musical notation, with a focus on melody and harmony.

Here in the first bar occur double and triple stops. By introducing the latter on the first and second

beats, an especially strong accent is obtained, and greater fullness. For string-orchestra the passage could be scored thus:

Violino I. *div.*

Violino II. *div.*

Viola. *ete.*

In bar 2 the violins and viola play in 8^{ves}, as do the violas, violoncellos and basses also (in unison).

In the following bars the melody and accompaniment are treated as before, with the addition, for the sake of ornament, of the pizzicato quaver figure for violoncellos, whence more interest and life are derived. The trio of the march begins in unison in three octaves; and the double-stops for the 1st violin, though marked *divisi*, can be played by one violinist. The rest is as before.

4. J. Lanner, Op. 93. Pesther Walzer.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

This arrangement differs from the foregoing in that the violoncello plays a few bars of the melody with the 1st violin. Thus not only is the effect very good, but the melody is more distinct than when played in a lower octave by the 1st violin (*divisi*) or by the 2nd violin or viola, because of the different tone colour of the violoncello. The dissonances between viola and violoncello (bars 2—4 and 9—12) as in the following waltz (bars 11—14) are not irritating in performance.

5. Johann Strauss, Op. 279. Morgenblätter - Walzer. No. 2*).

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

p

pizz.

p

arco

divisi

11 12 13 14

pizz.

arco

Here the violoncello plays the accompanying crotchets pizzicato for the first 8 bars for ornamental purposes, while in the next 8 it strengthens the melody. From bars 17—24 the 1st violin plays chords (div.) and from 25—28 the melody in 8^{ves}.

*) By permission of Aug. Cranz, Hamburg.

6. Franz Schubert, Op.33. N^o5. Deutsche Tänze.

6. Franz Schubert, Op. 33. N° 5. Deutsche Tänze.

Original Piano.

Violino I.

Violino II.

Viola.

Violoncelli.

Contrabasso.

p

cresc.

f

easy

cresc.

cresc.

cresc.

cresc.

cresc.

f

arco

pizz.

div.

f

arco

f

mf

mf

mf

arco

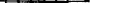
pizz.

mf

mf

arco

The 1st violin here takes the melody as written, the 2nd violin and viola playing the harmony strengthened by one or two added notes. In bars 5—8 of the first part the 2nd violin abandons its usual custom, by taking (bars 5—6) the melody in quavers, and in 7—8 by filling in the harmony. As the piece is transcribed for string-quintet the quavers must be given to the 2nd violin; yet they could be played by the 1st violin thus:

 in which case the 2nd violin would play its usual accompaniment. In order to avoid any-

thing like difficulties for the 1st violin, this arrangement has not been adopted. The same bars may also be arranged thus for string-orchestra.

The Violoncello part in the quintet is quite simple (*pizzicato*, marking the bass, and ornamental, and in the orchestra *pizz.* and *arco*.

The upper violoncello part is a free interpolated but not quite

independent melody. When there are several violoncellos both parts can be played, and the effect will be not a bad one.

The double-bass is used in the ordinary way.

7. Valse.

Original. Piano. *f*

Violino I. *f* or

Violino II. *f* or

Viola. *f*

Violoncello & Contrabasso. *f*

1. To be played by double stopping; and 2. triple stopping.

The bass (violoncello and double-bass) here gives out the melody (written in unison, but sounding in 8^{ves}): the 2nd violin and viola play the accompaniment, 1) by doubling the accompanying interval by means of double stopping; and 2) by triple stopping.

In the latter case the accompaniment is more powerful and fuller than the former.

In a similar manner the following bars of a galop may be played.

8. Galop.

Original. Piano. *ff*

Violino I. *ff* or

Violino II. *ff* or

Viola. *ff*

Violoncello & Contrabasso. *ff*

In In Ex. 7 and 8 the melody may be strengthened by the viola and violoncello playing in unison.

Exercise V.

Of various methods of arranging a theme for string-orchestra.

We have already given examples of a variety of ways of arranging pianoforte pieces for 3 and 4 strings. It is not unprofitable to show the same examples arranged for string-orchestra. It would not be difficult to add other forms of accompaniment to the themes than those already given; but we hold it for a fundamental principle to confine ourselves as strictly as possible to the original. Therefore we again make use of the former forms in the following exercises; but it must not be forgotten that now we are dealing with a string-orchestra, and so some alterations and additions may be made.

1. Kuhlau. Sonatina, Op. 55. No. 5, movement II.

Original.
Piano.

a)

Violino I.

Violino II.

Viola.

Violoncello & Contrabasso.

The arrangement marked a) is worked out in a manner similar to that in Ex. b) for string-quartet (see p. 64). The 1st violins take the melody; the 2nd violins, violas and double-basses the harmony, and the violoncellos the original quaver figure. The bass part may be written here and in b) and c) thus:

b)

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

In Ex. b) there are one or two slight differences from a). Now the violas play the quaver figure, though this might be as in Ex. b) of the quartet arrangement (q. v.). The 2nd violins and a parts of the violoncellos and the double-basses play the short chords to mark the rhythm, and the remaining half of the violoncellos support the melody of the 1st violins in the lower octave.

c)

Violino I. *mf*

Violino II. *mf*

Viola. *mf*

Violoncello. *mf* *div.*

Contrabasso. *mf*

In Ex. c) the original quaver figure is strengthened by another in the harmony, given out by the 2nd violins, half the violoncellos playing a new independent melody, and the remaining half playing the fundamental note with the double-basses.

d)

Violino I. *f* *div.*

Violino II. *f*

Viola. *f*

Violoncello. *f* *div.*

Contrabasso. *f*

In Ex. d) the melody appears in 3 octaves by means of 1st violins *divisi*, and violoncellos; the 2nd violins and violas play a short accentuated rhythmic figure in quavers, which differs from the original. The 2nd half of the violoncellos takes up the original quaver figure here used as a decoration, and the double-basses emphasize the rhythm of the 2nd violins and violas in leaps of fourths and fifths. In the 3rd and 4th bars the quaver figure in the 2nd violoncello part has been slightly altered because of the rather bad effect of the discord between the first and second violoncello parts.

In Ex. a, b and c this quaver figure can be employed in any of the following ways in any instrument according to the taste of the arranger.

legato *staccato* *pizzicato*

not very good better still better

The passing discords in b) and d) are not noticeable in the rapid *tempo* because of the melody in octaves, and so may be disregarded.

2. Beethoven. Sonata, op. 49, No. 2, 2nd movement.

Original. Piano.

Tempo di Menuetto.

a)

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

*) The 2nd violin and viola can also play this figure *legato*.

b)

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

**) The mark (o) indicates that the note is to be produced by harmonics.

c)

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

The musical score is for five instruments: Violino I, Violino II, Viola, Violoncello, and Contrabasso. It is in 3/4 time with a key signature of one sharp (F#). The score consists of 8 measures. Violino I and II are marked 'div.' (divided) and play a melodic line in the upper register. Viola and Violoncello play a quaver figure in the middle register. Contrabasso plays a bass line in the lower register. Dynamics include *p* (piano) and *pizz.* (pizzicato). The score is labeled 'd)' in the top left corner.

Ex. a) is a copy of the original with, however, not unessential doubled parts. In bars 1—4 the theme is supported by a portion of the violoncellos in the lower octave; from bars 4—8 the 1st violins divide and the melody is given out in 3 octaves. The 2nd violins and violas play the original quaver figure, and a portion of the violoncellos and the double-basses mark the bass in short crotchets.

In Ex. b) the 1st violin appears in bars 1—4 as an accompanying instrument; bars 4—8 the 1st violins divide, and the upper portion play the melody in the higher 8^{ve}, the lower half playing a free part. From bars 1—4 the 2nd violins play the theme; from bars 4—8 they, too, divide, the upper part continuing as before, while the lower takes up the accompaniment vacated by the 1st violins. The violas in bars 1—4 strengthen the 1st violin, but play the figure inverted: the violoncellos enter divided, the upper part playing an ornamental figure from bars 1—4, and from 4—8 they support the ornamental part given to the lower half of the 1st violins. The remaining violoncellos play the bass with the double-basses, the phrasing, however, being different.

In Ex. c) the divided 1st violins play the theme in 8^{ves} while the 2nd violins give out an ornamental melody also in 8^{ves}. The divided violas play the original accompaniment, and the upper part of the 1st violins is supported by the violoncellos in the lower 8^{ve}, while the 2nd violoncellos play with the double-basses.

In Ex. d) the 4 upper instruments are again divided. A portion of the 1st and 2nd violins and the violoncello play the theme, the last named instrument adding simultaneously thereto an ornamental part. The lower 1st violins utter an independent melody; the lower 2nd violins and violas take up the quaver figure of accompaniment, which in b) was played by the 1st violins and violas. The upper violas and lower violoncellos and double-basses play the former bass part *pizzicato*, notes being also added thereto.

When in the course of a piece several parts are written on one line (as in the above example) it is advisable, in order to facilitate reading, to write the divided parts upon two lines when the orchestral parts come to be written or printed.

This example is rather over-full, as it were, for the different melodies are not distinctive enough, owing to the comparative lack of variety in the tone-colour of the instruments.

3. Beethoven. Sonata, op. 13, No. 2, 2nd movement.

Largo appassionato.
tenuito sempre

Original.
Piano.

Free part.
p

sempre staccato

a)

Viola I.
p

Viola II & III.
p

Violoncello.
p

b)

Viola I & II.
p

Violoncello I & II.
p

c)

Violino I & II.
p

Viola.
p

Violoncello.
p

If examples b and c are played *con sordino*, the tone becomes still more colourless and dead.

d)

Violoncello I.
p

Violoncello II & III.
p

Contrabasso.
p

In the above arrangement several different tone-colours arise from the 'mixing' of the strings. Thus:

Ex. a) sounds, *p*, very gloomy and, as it were, shrouded, because of the tone of the violas and violoncellos in the deep register.

Ex. b) is somewhat similar, but rather fuller, because of the additional violoncello part.

Ex. c) is still fuller and more cheerful, because of the presence of the violins.

Ex. d) is rather sharper in colour, because of the violoncellos in the higher register.

If the violins, 1st and 2nd violas, violoncellos and double-basses were to play together the tone would be still fuller than in c). The semi-quaver bass figure could also be played pizzicato so far as the second quaver of the fourth bar.

*) See also p. 49, 50, 51.

Exercise VI.

Transcriptions of songs etc. for voice with string-quintet or orchestra accompaniment.

1. Frz Schubert. Das Wandern. (Müller-Lieder.)

Mässig geschwind.
Intro. g.

Original.
Piano.

a)

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

b) bad

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

c)

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

Takt 13 14

Voice.

Piano.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

This song offers some difficulties to the transcriber for strings by the very simplicity of the accompaniment; therefore we give several methods.

Ex. a) shows it transcribed as like as possible to the original. The violins accompany, but only play the upper intervals of the chords; the viola plays the semi-quaver figure in a slightly different form from the original; the violoncello can easily give the 8^{ve} leaps either *pizzicato* or *arco*. Not so the double-bass, however; this instrument, therefore, plays the same quaver on the strong beats only, either *pizzicato* or *arco* at pleasure.

Ex. b). Is not good because the even flow of the figure is interrupted by the rest. The 2nd violin and viola play an accompaniment and an added part, while the other instruments play as before.

Ex. c) is composed of the two previous examples. The viola gives the semi-quaver figure; the violins accompany, the 2nd viola and 1st violoncello sustain the harmony, while the 2nd and the double-bass proceed as before.

Bars 13 and 14 can be played as shown, the words 'col violin I' (signifying 'with 1st violin') being commonly seen in scores.

Original Piano.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

Massig.

a)

b)

c)

d) con sordino

pp

fp

cresc.

con sordino

pp senza sordino

V.C. D.s F.1

e) *easy*

Viola.

f) *div.*

Viola.

Violino I.

Violino II.

Viola.

Violoncello & Contrabasso

C.B.

V.C.

g) Bar 1 3 4

To transcribe the accompaniment to this song for strings is more difficult because it is not easy for the player to give the triplets perfectly truly and neatly.

In Ex. a), bar I, the 1st viola gives the original triplets; that the 6th may sound clear and distinct the 1st violin and the 2nd viola play them in quavers. The triplet figure is very difficult for the viola. In the following bars the 1st violin plays the triplets, supported by the 2nd violin. In the 3rd bar the 1st viola takes the upper 6th in the lower 8^{ve}, while the 2nd viola plays an added part; and in the later bars the violas unite in playing added harmonious parts. The violoncello and double-bass play the original bass in 8^{ves}.

Ex. b and c are simpler, but less to be recommended on account of the alteration in the original figure.

Ex. d) is similar to a) but with the addition of some doubled notes in various parts, and a more practical arrangement of the triplet figure. The triplets can be played also as in e and f. The best arrangement would perhaps be Ex. a) with the viola as in c). The triplets are not easy for the 1st violin, wherefore they may be written as in the simpler viola version.

Although g) is rather freer, it is easy to play and the best in effect.

In the later bars of this song another form of accompaniment is introduced, as may be seen below.

Bars 29 30 31 Bars 59 60 61

Voice.

Ich muss' auch heu-te wan-tern vor-bei in tie-fer und im-merhör' ich's rau-schen: du fän-dest Ru-he

Piano.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

The student is recommended to look at the following:

Gluck. Orfeo. Air: 'Che farò'.

Handel. Messiah. No. 2, Larghetto.

— No. 14, Andante.

Mozart. Don Giovanni, No. 8. Air: 'Ah! fuggi il traditu'.

Mendelssohn. Elijah, No. 18. Arioso.

— No. 26. Air.

The choice of songs, however, is not difficult.

3. Frz. Schubert. Am Meer.

Very slow. Takt: 12 13 14 15

Voice. Das Meer erglänzte weit hinaus Der Nebel stieg, das Wasser schwoll, die

Original. Piano. *p* *pp*

Violino I. *pp* a)

Violino II. *p* *pp*

Viola. *div.* *p* *pp*

Violoncello. *div.* *p* *pp*

Contrabasso. *p*

b) Takt 12 *div.* *pp*

c) *div.* *pp*

Violino I. *pp*

Violino II. *pp*

Viola. *div.* *pp*

Violoncello. *pp*

Contrabasso. *pp*

The musical score is for Schubert's 'Am Meer'. It features a voice part with German lyrics and a piano accompaniment. The piano part includes staves for Violino I, Violino II, Viola, Violoncello, and Contrabasso. The score shows measures 12 through 15. In measure 12, the strings play a tremolo. In measures 13 and 14, the tremolo continues. In measure 15, the tremolo is omitted. The score includes three different methods of tremolo: a) usually employed, b) undulating tremolo, and c) undulating tremolo. The score also includes dynamic markings such as *p* (piano) and *pp* (pianissimo).

The fact that this song already exists in a number of transcriptions is no reason why we should not use it again here. The introduction (as well as its continuation) offers few difficulties to the arranger of it for string-orchestra, since the greater part can be transcribed as in the original. One transcription, in which strings alone are used, is not inadmissible, though the character of the composition might have a different effect. When there are sufficient of the deeper strings the colour would be somewhat gloomy, which is well suited to the song. In the tremolo the violins might also share. Bars 12–14, where the tremolo appears, three different methods are shown: a) is that usually employed: b) and c) are the undulating tremolo, which, when well rendered, is calmer in effect.

In Ex. b) the two kinds are combined, though the undulating tremolo will be the more noticeable.

In Ex. c) the two kinds are again combined, but the undulating tremolo is still more dominant. On the double-bass a long sustained tremolo is very fatiguing for the player. Therefore it is omitted here, and the effect of the long-held bass note is good.

Exercise VII.

Arrangement of pianoforte pieces for a solo instrument with string accompaniment.

1. Chopin. E flat Nocturne. Op. 9. No. 2.

Original. Piano.

Audante.

espress. dolce

a)

Violino Solo.

Violino I.

Violino II.

Viola.

Violoncello & Contrabasso.

p

V.C.

p C.B.

b)

Violino Solo.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

dolce

p

pizz.

c)

Violino Solo.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

dolce

p

div.

pizz.

D. & F. 1

In selecting a piece for this purpose, care should be taken to choose one that is practicable and effective when arranged for the solo instrument. The piece may be transposed from its original key if the effect is better and the piece becomes more easily playable. As it would occupy too much space to go through the whole of the following examples, we have merely indicated in a few bars how the accompaniment etc. may be worked in several ways.

The nocturne is arranged for violin solo, which is easy to play in the original key.

In Ex. a) the quaver figure in the accompaniment, played by the violins and viola is, with the exception of a note or two, true to original. The double-bass marks the rhythm in crotchets either *arco* or *pizzicato*, and the violoncello plays with it either in unison or the 8^{ve}, but holding the notes, as in the pianoforte, where it is effected by means of the pedal. The lowest parts might be written thus:

V. Cello.

C. Bass.

arco

or

pizz.

In Ex. b) more notes of the harmony have been added and all the quaver parts move upwards.

In Ex. c) the accompanying quavers are played by the violins and viola with very good effect despite the difference in their mode of progression. The violoncello and double-bass may play as in c) as in a) and b), or even as in the example given in the text.

2. J. Field. Nocturne in E flat.

Molto moderato.

Original. Piano.

p con espressione

a)

Violino Solo.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

p

This piece, too, may be arranged in its original key for the same reasons as before.

In Ex. a) the 1st violin accompaniment is precisely as in the original; the 2nd violin and viola fill up the harmony, and the remaining instruments sustain the bass parts which in the pianoforte is effected by means of the pedal.

The quaver figure in a) does not flow so easily as that in c) because of the rest. It is as well, generally speaking, in such passages to omit the rests in

slow tempo. In the 15th bar, where the *tempo* changes, it would be better to supplant the rest by a note of the harmony.

b)

Violino Solo.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

p

In Ex. b) and c) again notes have been added to fill in the harmony. The quaver figure might be given to the 2nd violin or viola; but as such figures are better played by the 1st than by the 2nd violinists, to the former they should be given. It is not profitable to give the figure to the viola for the deeper tones of this instrument serve a better purpose in filling in the harmony. The double-bass might play the fundamental on the 1st and 3rd beats *pizzicato* if required.

From bar 15 the accompaniment may be played in 3 different ways, thus:

c)

Violino Solo.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

p

bar 15. a) b) c)

Violino I & II.

Viola.

Violoncello & Contrabasso.

etc.

etc.

etc.

div.

etc.

etc.

etc.

The following pieces may also be arranged thus:

Field — Nocturnes — (Peters Ed.) 1, 5, 9, 10, 11.

Schumann, R. Slumber-song. Op. 124. No. 16.

Gade. 3 Album-leaves. No. 1 etc.

Exercise VIII.

Arrangement for violoncello solo with string-accompaniment.

1. J. Field. Nocturne in B flat.

Original. Piano.

Moderato.

p cantabile

Field's Nocturne can also be arranged for violoncello solo in the original key, though it might be transposed to *A* or *A flat*. The effect, however, of the original is perhaps best. If the solo part is written in the tenor clef it is easier to be read by the professional but more difficult for the amateur.

The quaver figure of accompaniment in **a)** is given to the 1st violin, the 2nd violin and viola sustaining the harmony, and the double-bass accentuating the bass, playing one or two notes according as it is *arco* or *pizzicato*. The quaver figure here, too, would be more even if the rest were supplanted by a note of the harmony, as it may be in **b)** and **c)**.

In **Ex. b)** the figure appears in the viola part, while the remaining instruments play the full harmony in sustained notes.

Ex. c) is arranged like **b)**, except that the 1st violin plays a higher added melody and the violoncello double-stops.

a)

Violoncello Solo.

p cantabile

Violino I.

Violino II.

Viola.

Violoncello & Contrabasso.

arco

pizz.

b)

Violoncello Solo.

p cantabile

Violino I.

Violino II.

Viola.

Violoncello & Contrabasso.

Cb.

Vell.

c)

Violoncello Solo.

p cantabile

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

div.

pizz. od. arco

2. Mendelssohn. Song without words. No. 19. (Original in *Aflat*.)

Andante con moto.

p sempre tenuto e legato

Piano.

V.Cello Solo.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

pizz. or arco.

arco

a)

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

div.

pizz.

divisi

p

arco

b)

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

div.

pizz.

divisi

p

arco

c)

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

div.

pizz.

divisi

p

arco

This example is transposed from *Aflat* for the sake of greater ease in reading and arrangement. In *Aflat*

it would be more difficult for the violoncello, and less effective; in *G* it would be easier than in *A* but of less effect because of the deeper register. It is not so simple a matter to reproduce accurately this pianoforte piece for a solo instrument with accompaniment. A quaver or semi-quaver figure of accompaniment with a bass part in slow tempo (as in the Field nocturnes) is both grateful and of good effect. But literally to transcribe the music for strings as it stands for pianoforte would produce a thin and empty sound, for the notes would not sound on as on the keyed instrument when the pedal is used. In order, however, to attain a similar effect, sustained harmonies must be used with the accompanying figure, (cf. preceding exercises) when the emptiness at once disappears.

In quicker *tempo*, as in the following Ex.

The musical score is divided into three sections. The first section, 'Allegro', is in 2/4 time and consists of 8 measures. The second section, 'Allegro moderato', is also in 2/4 time and consists of 8 measures. The third section, 'Allegretto', is in 6/8 time and consists of 8 measures. The Violino part is written on a single staff, and the Piano part is written on a grand staff (treble and bass clefs). The key signature changes from C major to G major in the second section and to B-flat major in the third section.

added notes to fill in the harmony are not required, since here full harmonies occur on the strong and weak beats of the bar. Exceptions may also occur in slow *tempo* where sustained harmony is neither desirable nor fitting.

The accompaniment in Ex. 2a) (quaver figure) is, so far as regard the notes, similar to the original. Violin 1 and viola divide the figure, and moreover, the violin 1 fills in the harmony on the second and fourth beats. The 2nd violin plays a harmonious added part and the violoncello a bass like the original. The double-bass gives strength to the rhythm by the crotchets (*arco* or *pizz.*) and, later, by doubled notes.

In Ex. b) the viola alone plays the quaver figure, the violins and violoncello playing the harmonies, the violoncello 2 and double-bass the bass notes in unison. The latter instrument could also play as in a).

Ex. c) differs somewhat more from the original: the quaver figure, slightly altered, is given to the 1 violin, and continued by the viola, the former playing an added note when the latter plays the quavers. The 2 violin, which fills in the harmony with the 1 violoncello, takes up the quaver figure in passing with the viola at the second bar. The 2 violoncello and double-bass may play here as in a) and b). This and other pieces (see below) may be arranged in a similar way for viola.

Schubert. 'Prayer'.

Schumann. Träumerei.

— Abendlied.

— Schlummerlied. Op. 142. No. 16.

Beethoven. Bagatellen. Op. 33. No. 1.

— Adelaide. Op. 46.

Gade. Albumblätter. No. 1.

Mendelssohn. Song without words. No. 30.

— " " " Op. 19. No. 1.

— " " " Op. 19. No. 2.

— " " " Op. 38. No. 13, 20 etc.

Chopin. Prelude. Bmi. Op. 28. No. 6.

Field. Nocturnes. (Peters's Edn.) No. 1, 5, 9, 10, 11.

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Allegro grazioso.

Allegretto grazioso.

Original. Piano.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

p

leggiero

p

pizz.

p

The musical score for 'The Rose Tree' is presented in a system of six staves. The top two staves are for the Violin I and Violin II parts, both in treble clef with a key signature of one sharp (F#). The Violin I part includes a 'c' (crescendo) marking at the beginning and a 'mf' (mezzo-forte) marking later. The Violin II part includes a 'mf' marking. The middle two staves are for the Viola and Cello parts, both in bass clef with a key signature of one sharp. The Viola part includes a 'c' marking and a 'mf' marking. The Cello part includes a 'mf' marking and an 'arco' (arco) marking. The bottom two staves are for the Double Bass part, in bass clef with a key signature of one sharp. The Double Bass part includes a 'mf' marking. The score is divided into measures by vertical bar lines, and the music is written in a standard musical notation style with various note values, rests, and dynamic markings.

[illegible]

This Scherzo was composed in *E*, but is here transposed to *D* for ease in reading and better effect. Bars 1 and 2 are a replica of the original. In bar 3, the fifth of the harmony is added (2 violin) so as to complete the chord of the 6th, and in bars 4 and 7—9 the same instrument is used to strengthen the harmony. Bars 10—15 vary considerably from the original, for a literal transcription would sound thin and colourless — therefore an added part is given to the 2nd violin; the semi-quaver figure in an altered form to the viola, and the bass played in 8^{ves} by the violoncello and double-bass. Bars 16—19 are like 3—6; bars 20—22 like the first, while 23—26 are like 10—13 but in another key. The final bars call for no remark.

The following pieces may be arranged for string-orchestra.

Gade. Aquarellen. Op. 19.

— Der Kinder Christabend. Op. 36.

Volkman, Rob. Musik-Bilderbuch. Op. 11. No. 1—5.

Heller, Stephen. 'Promenades d'un solitaire'. No. 2—4.

Clementi. Sonata. Op. 36. No. 5. 2nd movement.

Kuhlau. Sonatina. Op. 88. Burlesco.

Mozart. Sonata. *G*. 1st movement. (Peters's 14).

— — *F*. " (" 5)

— — *F*. " (" 6)

— — *C*. " (" 8)

Beethoven. Sonata. Op. 2. No. 1. 2nd movement.

— — Op. 2. No. 1. 3rd "

Beethoven. Sonata. Op. 2. No. 2. 3rd movement.

— — Op. 10. No. 1. 2nd "

— — Op. 10. No. 2. 2nd "

— — Op. 13. 2nd "

— — Op. 22. 3rd "

— — Op. 26. 1st and 2nd "

— — Op. 28. 3rd "

— — Op. 31. No. 3. 3rd "

Schumann, R. Kinderszenen-Träumerei.

— Am Camin.

— Kind im Einschlummern.

Schubert, Frz. Moments musicaux. Op. 94. No. 1 and 2.

2. Mozart. Sonata in F, 2nd movement. Peters's Edn. No. 11.

Adagio.

Original.
Piano.

1 2 3 4 5 6 7 8

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

9 10 11 12 13 14

pp mf p f p

div.

15 16 17 18 19 20

mf pp cresc. tr

NB.

Allegro. 1 2 3 4 5 6 7 8 9

Original. Piano.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

10 11 12 13 14 15 16 17 18 19

20 21 22 23 24 25 26 27 28 29

D. & F. 1

To this transcription much has been added. In bars 1 and 2 already the former differs from the original. The rhythmic figure is strengthened in the upper and lower octave, power thus accruing, and through the pizzicato of the violas and violoncellos more firmness is given to the rhythm. In the bars 3-8 the 1st violins give the melody as well as an ornamental part; the 2nd violins and violas play the accompaniment; the violoncellos play the bars pizzicato as well as a decorative part, while the double-basses play the bass notes in octaves with the violoncellos. Bars 9 and 10 are like the original, except that in the accompaniment the position of the intervals is differently written, and occasional doubled notes occur; and the violoncello 1 plays an added independent melody in contrast to the original. In the case of such added melodies contrast must be aimed at. In bars 17-18 occur an added middle part and the bass is doubled. From 18 the 1st violins play the melody in octaves; from 19 the 2nd violin plays the figure alternately with an added part, while the violas undertake the filling in of the harmony and the accompaniment. The 1st violoncello (bar 19) introduces a new melody which in bars 25-27 is purely decorative, and the 2nd violoncello and a double-bass give the rhythmic accent in octaves (19-25). In bass 26-28 the 1st violin plays the figure in octaves, and the remaining instruments give the full harmony in crotchets. From 28-33 the *e* played on each half of the bar is heard in 3 octaves and in the bars (28-30) which form a bridge over which the first theme returns again; the 2nd violin plays a melodic rhythmic figure in 6^{ths} with the viola.

Bars 34-38 are arranged as 3-8 except that here the 2nd violoncello plays the ornamental part and the 1st the independent melody referred to above. In bar 39 occurs the strengthening of a chord of the diminished 7th and its performance pizzicato is excellent in effect. The figure which passes through three octaves in bars 40-41 is given to violins, violas and violoncellos. At the 42nd bar the outer parts are strengthened by the octaves and a passage played by the bass instruments gives life to the bar. The *diminuendo* in bar 43 etc. causes a nearer approach to the original and so few doubled notes occur from that point to the end.

Original.
Piano.

Violino I.

Violino II.

Viola.

Violoncello.

Contrabasso.

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

21 22 23 24 25 26 27 28 29

For the sake of easy reference the opening half-bar is reckoned as one bar. In bars 1—3 the first violin takes the melody; the 2nd the ornate figure and the added part; the violas fill in the harmony; and the bass is

